

# NAVAL HEALTH RESEARCH CENTER

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## *THE HEALTH STATUS OF WOMEN AND MEN IN THE NAVY AND MARINE CORPS: FINDINGS FROM THE 1995 PERCEPTIONS OF WELLNESS AND READINESS ASSESSMENT*

*L. L. Hourani  
H. Yuan  
R. M. Bray  
S. C. Wheelless*

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NAVAL HEALTH RESEARCH CENTER  
P. O. BOX 85122  
SAN DIEGO, CALIFORNIA 92186 - 5122

NAVAL MEDICAL RESEARCH AND DEVELOPMENT COMMAND  
BETHESDA, MARYLAND



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**THE HEALTH STATUS OF WOMEN AND MEN IN THE NAVY AND MARINE  
CORPS: FINDINGS FROM THE 1995 PERCEPTIONS OF WELLNESS AND  
READINESS ASSESSMENT**

**Laurel Lockwood Hourani, Ph.D., M.P.H.**

**Huixing Yuan, Ph.D.**

**Division of Health Sciences and Epidemiology**

**Naval Health Research Center**

**San Diego, CA**

**Robert M. Bray, Ph.D.**

**Sara C. Wheelless, Ph.D.**

**Research Triangle Institute**

**Research Triangle Park, NC**

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## EXECUTIVE SUMMARY

### Problem and Objective

With the rapidly changing demographic character of the US military (ie, the increasing proportion of women in the military, their expanded role into nontraditional occupations within the service, and their recent assignment to combat vessels), the development of baseline data to monitor changes in health status and health care delivery needs within the Department of Defense as a whole, and the naval service in particular, is of critical importance to the maintenance of military readiness. The general objectives of this initial report are to (1) estimate the prevalence of selected diseases in Navy and Marine Corps women, (2) produce baseline estimates of means and proportions for a broad range of potential risk factors, (3) make comparisons between women and men in the Navy and Marine Corps, and (4) make comparisons between the Navy and Marine Corps women and civilian women.

### Approach

The Perceptions of Wellness and Readiness Assessment (POWR) consisted of three components: a questionnaire study, a body measurement substudy, and a clinical telephone interview substudy. The main portion of the POWR Assessment, with which the present paper is concerned, was the questionnaire survey administered to a representative sample of 9859 active-duty, shore-based Navy and Marine Corps personnel worldwide. A two-stage probability sample was drawn with installations selected at the first stage and personnel assigned to selected installations and stratified by sex, race, paygrade, and geographic location, chosen at the second stage. The self-report questionnaire data, collected primarily by mail, provided baseline prevalence and risk factor information for 11 major classes of variables including sociodemographics, medical history, health care, perceived physical health status, mental health status, psychosocial functioning, selected personality characteristics, occupational stress, lifestyle factors, environmental/occupational health, and reproductive history. The SUDAAN (Survey Data Analysis software) was used to weight the data to represent all active-duty personnel and to perform descriptive and comparative statistical analyses.

## Results

Although relatively low rates of disorder were found in the military populations examined relative to available comparable civilian rates, 52% of the total sample reported having at least one current medical condition diagnosed by a health care provider. Navy personnel reported more lifetime and current health conditions than Marine Corps personnel, and both Navy and Marine Corps women reported more than men, with 61% of the women and 51% of the men reporting at least one current condition. Anemia and migraines were found to be more prevalent among female military respondents than among civilians. Navy women perceived themselves to be physically healthier and less stressed than Marine Corps women. Female Sailors and Marines, similar to civilians, tended to have higher rates of physical and mental illness, poorer perceptions of their health status, and greater health care and medication use than their male counterparts. Women reported more psychosocial risk factors, such as greater stress, less social support, and a lower quality of life than men. They were more likely to have been abused prior to service entry and be concerned with their weight. Women reported less job stress but also less job satisfaction than men. They also reported lower occupational and environmental exposures with the exception of exposure to used hypodermic needles. For both Navy and Marine Corps women, microwave exposure and heavy lifting were the primary exposures, followed by video display terminals for Navy women and noise for Marine Corps women. Over half the women in the sample reported menstrual problems or premenstrual symptoms within the last 3 months. The majority had received appropriate screening mammograms, breast exams, and PAP smears and, with the exception of the waiting time at the medical treatment facility, was generally satisfied with their OB/GYN care.

## Conclusions

This study has been instrumental in identifying areas needing further research in the aid of advancing Navy and Marine Corps women's health and readiness for military duty. It has found that in an overall young and healthy population, there are aspects of health care that can be improved and areas where prevention and intervention efforts should be optimized. These data may serve as baseline health indicators for future studies and analyses of naval service personnel.

## 1. INTRODUCTION AND BACKGROUND

National health surveys, such as the National Health and Nutrition Examination Survey (NHANES)<sup>1-3</sup> and the National Health Interview Survey (NHIS)<sup>4</sup> have served as important instruments of the nation's health monitoring systems. These surveys have established the normative distributions for certain population parameters such as height, weight, blood pressure and nutrition. In addition, these surveys have ascertained the prevalence of certain chronic diseases as well as the prevalence of risk factors for given conditions. Such information is essential in identifying health care needs and facilitating health care planning.

The numerous advantages of these types of data on civilians have been realized only to a very limited degree in research on military populations. Four Department of Defense surveys have provided population-based health data on active-duty members: the 1992 and 1995 Worldwide Surveys of Substance Abuse and Health Behaviors Among Military Personnel, the 1995 Department of Defense Survey of Health-Related Behaviors Among Military Personnel,<sup>5,6</sup> the 1992 Department of Defense Survey of Military Medical Care Beneficiaries,<sup>7</sup> and the 1989 Department of Defense Women's Health Survey.<sup>8</sup> Unfortunately, none of these studies allows estimation of baseline disease prevalence rates. In general terms, however, it has been shown that the number of illnesses experienced by active-duty members per year (as measured by the number of survey respondents who reported the number of times they were sick in the past 12 months with symptoms such as feeling flushed or sweaty, or having a runny nose or eyes, chills, nausea or vomiting, stomach cramps) significantly increased between 1985 and 1992, with a particularly high level in 1988.<sup>8</sup> The present study was designed to provide the disease-specific and sex-specific rates to understand such illness patterns and to identify particular health problems in specific groups.

In addition, with the rapidly changing demographic character of the U.S. military (i.e., the increasing proportion of women in the military,<sup>9</sup> their expanded role into nontraditional occupations within the service, and their recent assignment to combat vessels), the development

of baseline data to monitor changes in health status and health care delivery needs within the DOD as a whole, and the naval service in particular, is of critical importance to the maintenance of military readiness. It is expected that as the demographic composition of the Navy and Marine Corps changes, the nature and distribution of health care problems, as well as the health care system itself, will change.

The Department of the Navy's directive to maintain an optimal state of health and well-being<sup>10</sup> and the Bureau of Medicine and Surgery's strategic plan to provide timely access to the finest quality health care for all those served,<sup>11</sup> requires epidemiological and health services data to optimally support or to ensure continuous quality improvement of these efforts. As the largest epidemiological study of Navy and Marine Corps women funded by the Defense Women's Health Research Program, this study was designed to help meet this need by providing baseline information on the prevalence and distribution of disease, health risks, and health care behaviors in a representative sample of shore-based active-duty Navy and Marine Corps women. Baseline information was obtained in six general issue areas: reproductive, medical and physiological, psychosocial, lifestyle, occupational/environmental, and health services which have been reviewed in detail.<sup>10</sup> The general objectives of this initial report are to (1) estimate the prevalence of selected diseases in Navy and Marine Corps women, (2) produce baseline estimates of means and proportions for a broad range of potential risk factors, (3) make comparisons between women and men in the Navy and Marine Corps, and (4) make comparisons between the Navy and Marine Corps women and civilian women.

## **2. METHODS**

The 1995 Perceptions of Wellness and Readiness Assessment (POWR) consisted of three components: a questionnaire study, a body measurement substudy, and a clinical telephone interview substudy. Results of subsample body measurement and psychiatric telephone interviews will be reported separately. The main portion of the POWR Assessment, with which the present paper is concerned, was the questionnaire survey administered to a representative sample of active-duty, shore-based Navy and Marine Corps personnel worldwide.

## 2.1 Sample

The sample design for the POWR Assessment was a two-stage probability sample, with installations selected at the first stage and personnel assigned to selected installations chosen at the second stage. This approach allowed the sample to be restricted to a predetermined number of installations while preserving its inferential capability. In addition, stratification was used to further control the sample distribution with respect to organizational and demographic characteristics. The first-stage sampling frame for the Navy and Marine Corps for the 1995 DoD Survey of Health-Related Behaviors Among Military Personnel<sup>6</sup> was used as the basis for the first-stage frame for the 1995 POWR Assessment. The geographic distribution of the sample was controlled by stratifying by continental United States (CONUS) and outside the continental United States (OCONUS).

The target sample size for the survey consisted of 25,863 Navy and Marine Corps personnel selected from 45 geographic locations worldwide. This sample size was based on precision requirements for and targeted sample sizes of approximately 10% of the women in each service and an equal number of men. Estimated response rates were based on experience with similar methodology and eligibility rates obtained in the 1995 DoD Survey of Health-Related Behaviors Among Military Personnel.<sup>6</sup>

The eligible population of survey participants was all active-duty, shore-based personnel, except recruits, cadets, persons with unauthorized leave, and persons who had a permanent change of station at the time of data collection. The POWR Assessment had two specified precision requirements adopted from NHANES:

- a. A prevalence statistic of 10% should have a relative standard error less than 30%.

- b. Differences of at least 10% in health or nutrition statistics between any two major demographic subgroups should be detected with a type I error of no more than 0.05 and a type II error of no more than 0.10.

The first-stage frame was comprised of sampling units that were geographically proximal organizational units defined within each Service. Each first-stage unit was required to contain at least one organizational unit with 300 available persons to facilitate the body measurement component of the survey. Even though a large portion of the sample was surveyed by mail, clustering was used because the first two mailings to sampled persons were sent through the commanding officer (CO) in an attempt to increase the response rates. By restricting the sample to a set number of locations, the number of COs who needed to be contacted was also restricted. To construct the frame, an extracted file containing the counts of Navy personnel in each gender-race-paygrade group for each ZIP/FPO code/UIC combination was created from the Navy master personnel files maintained at NHRC. Marine Corps Headquarters provided Marine Corps personnel counts. August 1995 data were available for the Navy, and September 1995 data were available for the Marine Corps. At the second stage, rosters of individual active-duty personnel within each of the first-stage units were obtained. Then an equal probability, without-replacement sample of individuals was selected by choosing lines on the roster. By defining second-stage-sampling units to be lines on the roster, a mechanism was provided to fully account for any personnel changes taking place between the time of sample selection and data collection at a sample first-stage unit. At the time the sample was selected, positions were numbered on a conceptual roster and a random sample of line numbers was selected. The individuals named on the sample line numbers were then identified. The second-stage frame was stratified by paygrade group (E1-E6, E7-E9, and Officer), gender (male, female), and race (white, other). This was needed to control the distribution of the sample by paygrade, gender, and race to meet the precision requirements. Hourani and colleagues<sup>12</sup> have described the details of the sampling design, sampling weighting, and estimation procedures elsewhere.

## **2.2 Measures**

The questionnaire for the study included items for 11 major classes of variables that included sociodemographics, medical history, health care, perceived physical health status, mental health status, psychosocial functioning, selected personality characteristics, occupational stress, lifestyle factors, environmental/occupational health, and reproductive history.

### **2.2.1 Sociodemographics**

Sociodemographic measures included sex, age, race/ethnicity, highest education level, marital status, family status (living with spouse at present duty station), number of children under age 21 living in household, age at first child's birth of those reporting at least one child, paygrade, total time in service, branch of service, region/type of command currently assigned (CONUS/OCONUS), approximate total time served aboard ships, approximate total time deployed, and service in foreign operations (Persian Gulf, Somalia, Bangladesh, Haiti, other).

### **2.2.2 Medical history**

The medical history portion of the questionnaire consisted of a list of 44 medical conditions to which respondents indicated whether a health care provider had ever told them they had any of these. This list was adapted from NHANES III and excluded conditions primarily associated with the elderly, such as stroke and osteoporosis. Lifetime prevalence was assessed by a positive response to any past or current condition, and point prevalence was assessed by presence of a current condition (positive response to questionnaire item inquiring if respondent still had the condition).

Type and number of symptoms within the last 30 days were assessed from responses to a list of 26 common symptoms experienced, regardless of whether they resulted in a visit to sick call or a health care provider. Type of care (self-care, sought medical care, did nothing) was obtained for each symptom.

Recent and past medication use was assessed by responses to items concerning whether the respondent had ever used a “fair amount” of 13 classes of medications (prescribed or nonprescribed) for the last 30 days and the last 12 months, respectively.

### **2.2.3 Health care**

The study assessed extent of health care use by type of care based on 10 items concerned with the number of times respondents went to a military medical facility for their own health care during the past 12 months and by 10 items concerned with the number of times respondents went to a civilian doctor’s office or outpatient clinic. These items were adapted from the 1994-1995 Health Care Survey of DoD Beneficiaries.<sup>13</sup>

Satisfaction with health care (non-OB/GYN) services was assessed with a 10-item scale taken from the 1989 DoD Women’s Health Survey.<sup>8</sup> The scale inquired how satisfied respondents were on their last non-OB/GYN visit to a military medical facility and ranged from very satisfied (1) to very dissatisfied (5). An additional 4-item scale concerned satisfaction with medical personnel and was scored on a 5-point scale from strongly agree (1) to strongly disagree (5). Items on both satisfaction scales were reverse coded as needed and summed such that higher scores reflected higher satisfaction.

Access to health care services was assessed with three items inquiring about the primary person who treats the respondent, ability to address health concerns via telephone, and typical waiting time to be seen after arriving at the military treatment facility (MTF). The latter item also was taken from the 1989 DoD Women’s Health Survey.<sup>8</sup>

Self-care was assessed with two items concerned with the frequency respondents do testicular exams or examine their breasts for lumps.

Availability of health promotion services was assessed with a 6-item scale inquiring about whether counseling for smoking cessation, alcohol and drug abuse, birth control, weight control, and stress management was readily available if needed during the past 12 months. The 5-point scale ranged from strongly agree (1) to strongly disagree (5) and was developed specifically for this survey.

#### **2.2.4 Perceived physical health status**

Perceived physical health status was assessed with six scales from the Rand 36-Item Health Survey (Version 1.0) adapted from the Medical Outcomes Study (MOS).<sup>14</sup> The first scale consisted of five items and tapped general health perceptions. The second scale consisted of four items and assessed role limitations due to physical health. The third scale consisted of three items assessing role limitations due to emotional problems. The fourth scale consisted of four items and assessed vitality (energy level and fatigue). The fifth scale included two items assessing social functioning, and the sixth scale included two items assessing bodily pain. These scales have been found to have reliability (alpha) coefficients ranging from .76 to .88 and are scored from 0 to 100, with 100 representing optimal health status.<sup>15</sup>

#### **2.2.5 Mental health status**

Depressive symptomatology was assessed with the 20-item Center for Epidemiologic Studies - Depression Scale (CES-D). Widely used in community samples, the 4-point scale ranges from rarely or none of the time (less than 1 day) to most or all of the time (5-7 days) and inquires about how often respondents "have felt this way during the past 7 days."<sup>16-19</sup> Items are scored such that the higher the score, the more depressive symptomatology indicated by the respondent. Scores of 15 or greater and 16 or greater respectively are considered an indicator of depression in rural samples and urban samples.<sup>16</sup>

Psychological distress was assessed with the Hopkins-21. This shortened version of the widely used Hopkins Symptom Checklist has a 4-point scale ranging from not at all (0) to

extremely (3) and, as with the CES-D, inquires how the respondent felt during the past 7 days. The total distress score has been found to have high internal consistency (split-half alpha coefficients of .90 and .89).<sup>20</sup> Items were summed and averaged to obtain total distress scores such that the higher the score, the higher the distress. Normative data on 224 registered nurses found a mean total distress score of 35.56 (SD = 8.52).<sup>21</sup>

### **2.2.6 Psychosocial functioning**

Perceived quality of life was assessed, with 4 items adapted from Andrews and Withey,<sup>22</sup> on 5-point scales: one global item inquiring how respondents felt about their “life as a whole” and three items inquiring how they felt about their job, themselves, and their personal life. These items represent the four life domains as assessed in Caplan et al.<sup>23</sup> and Woodruff and Conway,<sup>24</sup> and they have been shown to have an internal consistency with an alpha = .81.<sup>25</sup> Response options ranged from terrible/unhappy (0) to pleased/delighted (4). This measure has been used in several previous Navy samples<sup>22-26</sup> and provides a single summary score.

Life events were assessed with four items taken from the U.S. Army’s Fit to Win Health Risk Appraisal (HRA) (DA Form 5676). One item inquired how many serious personal losses or difficult problems the respondent had to handle in the last year. A 4-point response scale ranged from none (0) to several (3). One item inquired how often respondents had serious problems dealing with their spouse, parents, friends, or their children, and one item inquired how often they experienced a major pleasant change in the past year. Four response options ranged from never (0) to often (3). A fifth item inquired what caused the biggest problem in the respondent’s life. Seven response options included money, social life, family, supervisor, job, health, or no problem.

Suicidal ideation was also assessed with an item taken from the HRA that inquired whether the respondent had seriously considered suicide within the last 2 years. Recency of suicidal ideation was assessed by affirmative responses indicating within the last year and within the last 2 months.

History of abuse was assessed with seven items specifically developed for this survey: three items inquired whether the respondent had been abused (emotionally, sexually, physically) prior to entering the military and three items inquired whether the respondent had been abused (emotionally, sexually, physically) since entering the military. An additional item inquired whether respondents had received treatment for abuse.

Stress and coping were assessed by four items developed at the Department of Military Psychiatry at the Walter Reed Army Institute of Research and modified for this Navy sample. Three items inquired how much stress had affected the respondent's life as a whole, personal life, and performance on the job over the past 7 days, and were scored on a 5-point scale from none at all (0) to an extreme amount (4). A fourth item inquired how well the respondent coped with stress over the past 7 days and was scored on a 5-point scale from very poorly (0) to very well (4).

Exposure to disaster/violence was assessed by three items specifically developed for this study. Respondents were queried whether they had ever been exposed to a natural disaster, combat or violence, and a major accident involving injuries or fatalities and if so, as a witness, survivor/victim, or participant in aid, cleanup, rescue, or investigation.

Social support was assessed with a modified version of the Social Network Index.<sup>27-29</sup> This index was developed by the Human Population Laboratory and has predicted a number of health outcomes. It also has been used in several previous Navy samples.<sup>25</sup> In accordance with scale developers, 10 questions inquiring about various group affiliations were reduced to a single question regarding nonchurch group membership and another about church-connected groups. The standard scoring protocol for the index was followed in which a sociability score was obtained from three items inquiring about the respondent's number of close friends and relatives and was combined with marital status to form the index of intimate ties. Scores from the index of intimate ties were then combined with the organizational membership score and the church membership score to form the Social Network Index.

Marital relations measures were taken from a restructured version of the Social Adjustment Scale-II.<sup>30</sup> The marital conflict measure was derived from factor analyses conducted on studies of blue-collar workers<sup>31,32</sup> and averaged the sum of two items dealing with help-seeking for marital problems and one item on time spent thinking about marital problems (never (1) to very often (5)). This measure was supplemented with a single-item measure of marital satisfaction taken from the Marital Satisfaction Scale.<sup>33</sup> Scores range from 1-5 with 5 being the most favorable toward marriage. This single item had the highest correlation ( $r = .79$ ) with the overall score of the original 73-item scale and was included as a balance to the negative wording of the Marital Conflict Scale.

### **2.2.7 Selected personality characteristics**

Global self-esteem was assessed with the Rosenberg Self-Esteem Scale. This 10-item scale has been shown to have an internal consistency of  $r = 0.78$  and significant negative correlations with depression measures.<sup>34</sup> The 4-point scale ranges from strongly agree to strongly disagree and yields a range of scores from 10 (lowest self-esteem) to 40 (highest self-esteem).

Trait Anger was assessed with the T-Anger scale from Spielberger's State-Trait Anger Expression Inventory.<sup>35</sup> This scale measures individual differences in the disposition to experience anger and as two subscales: Anger Temperament (T-Anger/T), a 4-item subscale that measures a general propensity to experience and express anger without specific provocation, and Anger Reaction (T-Anger/R), a 4-item subscale, that measures individual differences in the disposition to express anger when criticized or treated unfairly by other individuals.<sup>35</sup> Alpha coefficients with Navy samples have been shown to range from .84 to .86 and .71 to .75 for each subscale, respectively. The 4-point scale ranges from almost never (1) to almost always (4) and yields a range of scores from 10 to 40.

Trait Anxiety was evaluated by the 20-trait items of the Spielberger State-Trait Anxiety Inventory (STAI).<sup>36</sup> The 4-point scale ranging from almost never (1) to almost always (4)

inquired about how respondents “generally feel” and yielded a range of scores from 20 to 80. The STAI is a widely used measure of relatively stable individual differences in anxiety-proneness, and it reflects the frequency and intensity with which anxiety states have been manifested in the past and the probability that state anxiety will be experienced in the future.<sup>36</sup> Test-retest correlations for college students have ranged from .73 to .86, and a high internal consistency reliability coefficient of  $\alpha = .93$  was obtained in a sample of working adult males.<sup>37</sup>

### **2.2.8 Occupational stress**

Perceived job pressures were assessed with the 12-item Job Pressures Scale constructed by James House in his research with factory workers.<sup>38</sup> On the basis of principal component factor analysis, these items could be clustered into four indices reflecting job versus non-job conflict, role conflict, quality concern, and responsibility. Respondents were asked to indicate how often they were “bothered” by the pressure or stresses of their job on a 5-point scale ranging from not at all (0) to nearly all the time (4). Overall and subscale scores were obtained by summing and averaging the raw scores.<sup>39</sup>

General job satisfaction was assessed with four items from Quinn and Shepherd<sup>40</sup> and from an occupational self-esteem item to form the Job Satisfaction Index adopted by House.<sup>38</sup> Two items concerning the level of satisfaction and happiness with the job, two items concerning the respondent’s readiness to make the same decision now to take the job and/or recommend it to a good friend, and one item concerning whether the job measures up to prior expectations were reworded to indicate the respondent’s military job and averaged to create a measure of military job satisfaction. Scores can range from 0 (low satisfaction) to 10 (high satisfaction). This scale was found to have an internal reliability of  $\alpha = .79$  among a sample of nuclear power plant workers.<sup>31</sup>

### 2.2.9 Lifestyle factors

Diet and nutrition measures were obtained primarily from previous national and Navywide surveys. Body mass index was calculated from self-reported height and weight. Weight satisfaction was assessed with four items taken from NHANES III.<sup>1,41</sup> Two items concerning satisfaction with eating patterns and eating in secret were taken from the Eating Disorders Index. The presence of the first item and absence of the second item were found to be useful in predicting bulimia among women in a primary care setting.<sup>42</sup>

Developed for the Navy's Health and Physical Readiness (H&PR) Study,<sup>25,43</sup> six items measured general dietary behavior. Respondents indicated the approximate number of days they ate breakfast, ate snacks, overate, did not eat enough, and took vitamins and antioxidants during the past 7 days.

A food purchasing measure was also created that assessed the importance of considering health, price, taste, convenience, and calories when purchasing food. This 5-item scale ranged from not at all (1) to extremely important (5).

Nutritional value was assessed with two items taken from the Navy Health and Nutrition Survey.<sup>43</sup> One item inquired whether the respondent was interested in hearing/reading about nutrition and was scaled from "yes, very much" (1) to "no, not at all" (5). A second item inquired how important respondents felt diet was in terms of their health and was assessed on a scale ranging from "probably the most important factor" (1) to "of little or no consequence" (5).

Sleep was assessed with a single item inquiring how many hours of sleep the respondent received on the average during the past 30 days.

Frequency of physical activity was assessed by an item taken from the Healthier People Survey (Carter Center Health Risk Assessment) that inquired how many times in an average week the respondent engaged in exercise or work that lasted at least 20 min without stopping.

Duration of physical activity was assessed by an item inquiring how long the respondent had been on this schedule. A third item taken from the H&PR Studies assessed perceived physical fitness on a 5-point scale ranging from poor (0) to excellent (4).<sup>25</sup>

Tobacco use was assessed by nine items concerned with amount and frequency of smoking tobacco, use of smokeless tobacco, and quit history. Amount of lifetime tobacco use was assessed by total number of pack-years.

Caffeine use was assessed by a single item inquiring about the average number of caffeinated beverages the respondent had per day during the past 7 days.

Alcohol use was assessed with two items concerned with the average amount and frequency of alcohol consumed in the past 30 days. These items were adapted from the 1992 Worldwide Survey of Substance Abuse and Health Behaviors Among Military Personnel, were recoded, and then multiplied to obtain the average amount per day.<sup>5</sup>

Birth control practices were assessed with four items. The first item, taken from NHANES III, inquired how many sexual partners the respondent had in the last 6 months. Current birth control method was assessed from a list of 14 possible methods. Reason for not using birth control was obtained from a list of possible reasons.

#### **2.2.10 Environmental/Occupational health**

Occupational exposure measures were taken from the NHIS and from previous Naval Health Research Center (NHRC) occupational surveys.<sup>4</sup> Three items taken from NHIS assessed utilization of protective gear on the job.<sup>4</sup> These items inquired whether protective gear was available, frequency of use, and reasons for nonuse. A fourth item inquired about the participation in a medical surveillance program (Navy industrial hygiene monitoring program for known occupational exposures, including asbestos, noise, lead, chromium, cadmium, non-

ionizing radiation, and ionizing radiation). Exposure to tobacco smoke in work and/or living area in the past 30 days was also determined.

Lifetime and recent (within past year) environmental and occupational exposures were assessed with a list of 32 known health hazards taken from NHRC's Occupational History Survey (1984). Duration of exposure (categorized as 5 or more years) was also obtained for 22 health hazards.

### **2.2.11 Reproductive history**

A special supplement for women measured female-specific conditions, menstrual problems and estrogen use, access to and satisfaction with OB/GYN facilities, pregnancy history and planning, and cancer screening. Most items were adapted from the national health surveys or risk factor measures.

Prevalence of female-specific conditions was assessed from a list of 17 conditions the respondent may have had during the past 3 months, regardless of whether they resulted in a visit to sick call or a health care provider. Menstrual history and estrogen use included three questions regarding the missing of one's period in the last 30 days, age menstrual cycles began, and type of replacement estrogens taken during the past 30 days. Six questions were used to assess female-health preventive behaviors and cancer screening: two items on time since last Pap smear and lifetime prevalence of a negative Pap result, and four items regarding time since last breast exam by a physician or nurse, mammogram in past 5 years, training in breast self-exam, and lifetime occurrence of noncancerous lump removal.

Fourteen questions assessed access and satisfaction with military OB/GYN services. Adapted from the 1989 DoD Women's Health Survey,<sup>8</sup> 10 items on a 5-point scale ranging from very satisfied (1) to very dissatisfied (5) assessed the respondent's satisfaction with services on her last OB/GYN visit in a military medical facility. An additional four questions assessed

access to information regarding pregnancy and risks, sufficient number of trained personnel, time off the job for prenatal care, and difficulty of receiving care while on OCONUS orders.

Thirteen items, primarily obtained from NHANES III, were used to obtain pregnancy and childbearing history. Current pregnancy rate, annual pregnancy rate, and active-duty pregnancy rates were assessed as well as adverse reproductive outcomes within the past 12 months. Two items adapted from Gerrard and colleagues<sup>44</sup> assessed attitudes toward pregnancy. Women were asked how happy or unhappy they would be if they were to become pregnant in the next year and scored on a 5-point scale from extremely happy (1) to extremely unhappy (5). Women were also asked how convenient or inconvenient it would be to get pregnant in the next year and scored on a 5-point scale from extremely convenient (1) to extremely inconvenient (5). Gravidity, parity, history of breast-feeding, history of prematurity, and perceived general healthiness of respondent's children relative to other children their age were each single-item measures.

### **2.3 Data collection procedures**

The survey design was primarily a mail survey with a small number of sites participating in group sessions. For the mailout portion, packets were sent to the selected respondents through their unit commanding officers (COs), who were asked to distribute the packets to the individuals and to encourage their participation.

A second mailing was also made several weeks later through the unit COs. Lists were provided of those selected unit members who had not yet responded, and a second questionnaire packet was included for the COs to distribute. A third mailing of a packet was sent directly to the selected personnel who had not responded to either of the first two mailings.

To accommodate the body measurement component of the research, questionnaires were administered during on-site group sessions at a limited number of first stage sampling units. Five sites (two West Coast Navy bases, one Pacific Navy base, and two West Coast Marine Corps sites comprising 17% of the total 25,863 individuals selected) were selected for on-site data

collection followed by a single mailing to eligible nonattendees. All data collection was conducted during the fall and winter months of 1995 to 1996. Details of the data collection preparations and procedures are discussed elsewhere.<sup>12</sup>

## 2.4 Statistical analysis

Statistical analyses were conducted using SUDAAN, a statistical software package developed at the Research Triangle Institute specifically for the purpose of analyzing data from complex surveys.<sup>45</sup> All statistical tests were conducted on weighted data in the SUDAAN to obtain appropriate variance estimates for the two-stage, deeply stratified, two phase design.<sup>46</sup> Estimates of population proportions take the form of (combined) ratio estimates where the estimator is a nonlinear statistic and the variance of the estimator is approximated using a Taylor series linearization. Although ratio estimates are usually biased, the bias becomes negligible in a large sample.<sup>46</sup> To examine significant differences in potential risk factors, the CROSSTAB procedure in SUDAAN was used to calculate weighted estimates of percentages, frequencies, and estimates of their errors. Chi-square tests evaluated gender differences in other demographic variables and Navy-Marine Corps differences in satisfaction with health services. The DESCRIPT procedure was used to produce the weighted proportions, means, and t-tests for the comparisons between women and men by service. Where comparable civilian prevalence rates (age 18-63) were available, they were included in the tables. DESCRIPT also has the capability of producing standardized estimates for comparing the characteristics of two populations with differing distributions of confounding attributes. The approach used for calculating the standard errors is a first-order Taylor series approximation of the deviation of the estimates from their expected values.<sup>47</sup> Specific estimation procedures and equations are provided elsewhere.<sup>12</sup>

## 3. RESULTS

A total of 9856 Navy and Marine Corps personnel responded to the survey with usable questionnaires. The response rates among eligibles were notably higher at the group session sites (57.2%) than at the mail sites (36.0%). Two overall response rates were computed. The first, 39.6%, included all persons determined to be eligible; the second, 41.8%, eliminated 1305

persons whose questionnaires from the third wave of mailing were returned because of incorrect addresses. As described by Hourani and colleagues,<sup>12</sup> the weights were adjusted by poststratifying them to the population counts within cells defined by gender, race, paygrade, region, and service. Because prior literature suggests that estimates are expected to vary among respondents defined by these cells, these adjustments tend to diminish differences attributable to varying cooperation rates among respondents in these groups. To the extent that there are few differences between respondents and nonrespondents to the survey, biases will be minimal.

### **3.1 Sociodemographics**

Table I shows the final demographic distribution, as well as key service-related background information. Only one year separated the mean age between women (29) and men (30). A greater proportion of women than men were black, had at least some college education, and were separated, widowed, or divorced. Ninety-one percent of both married men and women were living with their spouse or cohabiting at the same duty station. Women were less likely than men to have children and had fewer children than men. However, of those with any childbirth, a greater proportion of women had their firstborn before the age of 20, and men were more likely to have their first born after age 25. Significantly fewer Marine Corps women were represented in the sample than men or Navy women. Women also had about 2 years' less time in the service, including time assigned to ship duty and time deployed at sea. The proportion of officers and the command location were similar among men and women participants, but women were much less likely to have served in a foreign theater. Among women only, Navy women were on the average 2 years older than Marine Corps women. Women Marines were also less likely than women Sailors to be Caucasian, college graduates, married, or officers.

### **3.2 Medical history**

Of the total sample, 64% had at least one medical condition that a health provider had told them about at some time in their lives, and 52% reported still having it (Table II). Navy personnel reported more lifetime and current health conditions than Marine Corps personnel, and

both Navy and Marine Corps women reported more than men, with 51% of the men and 61% of the women reporting at least one current condition.

Table III shows the distribution of lifetime and point prevalence of 44 conditions reported by Navy and Marine Corps women and men. For conditions that showed similar or higher unadjusted prevalence rates relative to civilian rates, age- and sex-adjusted rates were computed by direct standardization to the civilian population obtained from the 1994 NHIS. The unstandardized rates, reflecting actual prevalence estimates, are shown in the body of Table III and the standardized rates of the selected conditions, reflecting the civilian rate if it had the age and sex distribution of the Navy, are shown in footnotes. T-tests assessed significant differences between civilian standardized and unstandardized rates. Among women, the most prevalent lifetime conditions were urinary tract infections, vision impairment/problems, allergies, and anemia. Among both Navy and Marine Corps men, the most prevalent lifetime conditions were head injury (involving stitches or unconsciousness), vision impairment/problems, hearing loss/problems, and allergies. Women in general had equal or somewhat higher rates than men of most lifetime disorders. Notable exceptions for both Navy and Marine Corps men were for hernias, kidney stones, gonorrhea, head injuries, and hearing loss/problems. Rates for Navy men only exceeded those for women in lifetime hypertension and high cholesterol.

Current or point prevalence rates were highest for vision impairment/problems, hearing loss/problems, and allergies among Navy and Marine Corps men. Among both Navy and Marine Corps women, current rates were highest for vision impairment/problems, allergies, and migraines. Women reported substantially higher (i.e., threefold) rates than men for anemia, varicose veins; bowel or intestinal trouble (colitis); bladder trouble, including urinary tract infections; repeated kidney infections; thyroid disease; eating disorders; migraines; and depression. Navy women also reported significantly higher rates of hay fever and hemorrhoids than Marine Corps women ( $t = 2.52, p = .0157$  and  $t = 2.91, p = .0059$ , respectively). Navy men had higher rates than Marine Corps men did for both a lifetime and current positive TB test result and for heart disease. The higher TB rates may be associated with increased exposure to countries where TB is endemic and/or factors associated with communal living conditions such

as aboard ship. The increase in heart disease is consistent with the greater prevalence of overweight, hypertension, and elevated cholesterol found in Sailors relative to Marines (see also Bray et al.<sup>6</sup>).

Relative to available comparable civilian rates, Navy and Marine Corps women and men reported overall fewer current medical conditions. Exceptions were higher rates reported for heart murmurs and hemorrhoids in men and women, varicose veins, other blood circulation problems, and hearing problems in men only, and anemia and migraines in women only. An examination of anemia prevalence by other demographic variables showed no difference in rates by age group but significantly higher rates among black women (i.e., 4% for whites, 12% for blacks, and 6% for other;  $X^2_2 = 36.7, p < .001$ ), and among low paygrades (8% for E1-E3, 6% for E4-E6, 4 % for E7 and higher;  $X^2_3 = 14.4, p < .01$ ). An examination of migraine prevalence in women by other demographic variables showed significant differences by age group only with a trend toward higher risk among older women ( $X^2_3 = 21.5, p = .0006$ ).

Of the total sample, 83% reported having at least one common medical symptom within the last month. Table IV shows the number of symptoms reported by Navy and Marine Corps men and women. Overall, Marines reported about the same number of symptoms as Sailors. More Navy and Marine Corps women reported at least one current symptom than men, and almost twice as many women as men reported 11 or more current symptoms.

Table V shows one-month prevalence rates of the common symptoms and how they were treated. Cold symptoms, sore throats, sinus trouble, and headaches led the list for both men and women, followed by back problems. Women were more likely to report gastrointestinal problems, whereas men were more likely to report muscle sprains or strains. Men and women reported using self-care about equally frequently, whereas women reported seeking medical care more frequently than men. Conditions for which women most frequently sought medical care were muscle sprain or strain, skin problems, flu, nausea/vomiting, shortness of breath, fever, and back problems.

Table VI shows the one-month and one-year prevalence of medication use by gender. Aspirin or other painkillers were the most frequently used medications by both men and women. Women reported greater use of all medications, with the exceptions of those medications used in combat or other foreign operations, such as antimalarial pills, pyridostigmine, and ciprofloxacin (anti-anthrax pills).

### 3.3 Health care

Tables VII and VIII show the average number of visits to an MTF and a civilian doctor's office or outpatient clinic, respectively. The large majority of health care visits for both Navy and Marine Corps personnel took place at an MTF. Navy women reported an average of 10 health care visits to a MTF in the past year, and Marine Corps women reported an average of 11 visits. Male Sailors and Marines reported almost half the number that women reported, with an average of 6 visits per year. The most frequent type of care sought was for illness or injury. Navy and Marine Corps men and women averaged only one visit to a civilian doctor the past year. Military medical facility visits outnumbered visits to a civilian doctor for almost every type of care for both genders and services. The only exceptions appeared to be same-day surgery visits for Navy women and mental health visits for Navy and Marine Corps men in which the small number of visits were the same for both military and civilian outpatient facilities. Women tended to have a greater number of visits to both military and civilian health care facilities than men did across types of care. Both male and female Marines had slightly higher usage rates for illness or injury and follow-up for illness or injury than Navy personnel.

Table IX shows the distribution of attitudes toward medical personnel in military medical facilities. More than 60% of men and women in the Navy and Marine Corps responded that medical personnel seemed warm and friendly, treated them with appropriate respect, and seemed to take their problem seriously. However, Navy men agreed less often than Navy women. Fewer Sailors and Marines agreed that medical personnel seemed interested in them as a person, with Marines agreeing significantly less than Sailors.

Table X compares men and women on self-reported satisfaction with various aspects of non-OB/GYN services at their last visit to an MTF. The majority of men and women in both the Navy and Marine Corps were satisfied or very satisfied with the quality of medical services they received, the amount of time it took to get to the medical facility, the variety of medical services available, the type of medical professionals seen, the amount of privacy they had during their visit, the consideration and respect shown to them, and the timeliness of their follow-up care. While there was little variation in satisfaction between male Sailors and Marines, female Marines were consistently less satisfied than female Sailors. Relative to 1989, both Navy and Marine Corps women in the 1995 sample were more "satisfied" and less "very satisfied" with all aspects of medical services. The aspect of medical services both Sailors and Marines were least satisfied with was the amount of time they waited at the medical facility to see a provider. Fewer than half of Navy men and only 45% and 47% of male and female Marines, respectively, were satisfied with the amount of time they waited at the facility to see a provider. If "very satisfied" and "satisfied" responses were combined, women Marines in 1995 were less likely than those in 1989 to report satisfaction with waiting time or priority shown at the MTF. Table XI shows that approximately 20% of the personnel reported waiting over an hour at the facility before seeing a provider. It also shows some gender differences in the primary person who treated them at the facility. That is, women were most likely to see a doctor, whereas men were most likely to see a Corpsman. Men were also less likely than women to know whether they could ask someone in the military medical system a question about a health concern on the telephone or to practice preventive self-care. For example, 63% of the men never or rarely did a testicular self-exam, but only 23% of the women never or rarely examined their breasts for lumps (data not shown).

### **3.4 Perceived physical health status**

Table XII gives the mean scores for the MOS, with a score of 100 indicating perceived optimal health. Both Navy and Marine Corps women had lower scores than the men on all six scales. Further, Marine Corps women scored lower than Navy women, particularly on the scale that measured role limitation due to physical health.

### **3.5 Mental health status**

On the mental health measures for which higher scores indicate higher symptom levels, Marines tended to score higher than Sailors and women higher than men, with female Marines reporting the most depression and psychological distress (Table XIII). The results of comprehensive clinical psychiatric telephone interviews are reported elsewhere.<sup>48</sup>

### **3.6 Psychosocial functioning and selected personality characteristics**

Navy women reported greater anger, anxiety, and marital conflict with lower social support and quality of life than Navy men. Marine Corps women reported significantly more anger and less social support than Navy women did and, as shown in Table XIV, Marine Corps women reported a greater amount of stress in their lives than Navy women. The absolute differences were small however and may not reflect clinical significance. Both women Sailors and Marines reported more stress in their lives than their male colleagues. Navy women reported more frequent serious interpersonal problems, were more likely than Navy men to report their social life and work as the biggest problems in their lives, and to have seriously considered suicide within the last 2 years (Table XV). Marine Corps men were significantly more concerned with their job than Navy men and were more likely to have considered suicide.

Some of the largest gender differences in psychosocial functioning were shown in the exposure to traumatic events (Table XVI). Navy and Marine Corps women were more frequently emotionally, sexually, and physically abused, both prior to and since entering the military. Women Marines reported more abuse than female Sailors but were less likely to have received treatment. On the other hand, Navy and Marine Corps men were much more likely than women to have been exposed to a natural disaster, combat or violence, or a major accident involving injuries or fatalities, with Sailors more likely exposed to natural disasters and Marines to combat or violence.

### 3.7 Occupational stress

With regard to occupational variables, more Navy men than women reported job stress in terms of greater responsibility and quality concerns, but they also reported more job satisfaction. Marine Corps men reported much more job stress than Navy men and less job satisfaction (Table XVII).

### 3.8 Lifestyle factors

Lifestyle factors were another class of variables in which gender differences were important. As shown in Tables XVIII to XX, Navy and Marine Corps women were more likely than men to have considered themselves overweight, desired to weigh less, tried to lose weight in the past year, changed what they eat because of a medical condition, reported symptoms of eating disorders, been interested in nutrition, have felt diet is important to health, and considered nutritional value and convenience important when purchasing food. Marine Corps women followed a similar pattern as Navy women with the exception that fewer ate breakfast, considered themselves overweight, and considered eating enjoyment or nutritional value important when purchasing food. Both Navy and Marine Corps women were also less likely than men to engage in strenuous exercise and to consider themselves in very good or excellent physical fitness, and agree that counseling was readily available on weight control (Table XIX). Navy and Marine Corps men, on the other hand, slept less, drank more caffeinated beverages and alcohol, smoked more cigarettes, and had more sexual partners than women (Table XX). Although female Marine smokers smoked fewer cigarettes than Navy women smokers, male Marine smokers smoked more cigarettes than Navy men smokers.

Table XXI shows birth control measures used for both men and women. The most frequent birth control method was the condom for men and the Pill for women. Approximately one third of the men and one quarter of the women did not use any birth control. The largest proportion of those indicating a reason for not using birth control were trying to get pregnant. Of

all female respondents, 9% of the Navy women and 7% of the Marine Corps women reported currently trying to get pregnant.

### **3.9 Environmental/Occupational health**

Table XXII shows the percent distribution of known health hazards that respondents reported being exposed to in jobs or hobbies for 5 or more years. Loud noise ranked first for both genders and services, followed by engine exhaust, grease, oils, and fuels, and general shop dust. Men were much more likely to be exposed than women to all kinds of hazards, and Navy personnel were generally more frequently exposed than Marines. One exception was a higher proportion of men in the Marines than in the Navy who reported exposure to severe cold.

Table XXIII shows the distribution of self-reported occupational and environmental exposures. The most frequently reported exposures by Navy personnel were to heavy lifting, microwave ovens, video display terminals (VDTs), and noise and exhaust from gasoline engines. The most frequent exposures reported by Marines were to heavy lifting, noise, microwave ovens, diesel exhaust, and gasoline engine exhaust. For both Navy and Marine Corps women, microwave exposure and heavy lifting were the top exposures, followed by VDTs for Navy women and noise for Marine Corps women. Significantly more men than women reported being exposed to the majority of potential occupational and environmental hazards. The only exception was Navy women who reported greater exposures to used hypodermic needles. Marine Corps women more often reported exposures to asbestos, carbon monoxide, and solvents than Navy women, while Marine Corps men more often reported exposure to loud noise, heavy lifting, paint, transmitting antennas, and explosives than Navy men. More male and female Marines than Sailors reported exposure to diesel exhaust and fuel and dry cleaning solvents.

Table XXIV shows the reported use of protective gear for occupational exposures. Women were significantly more likely to report that protective gear was not applicable to their job. A similar proportion of men and women (13% and 14%, respectively) reported that protective gear was not or only sometimes available for their use in their current job. About 9%

of the Navy sample and 17% of the Marine Corps sample never or sometimes used protective gear when in contact with substances that might be harmful. More Navy men than Marine Corps men reported always wearing protective gear. The most frequent reason cited for not wearing protective gear by both Sailors and Marines was that it interfered with job performance. The second most frequent reason for not wearing the gear was because it was uncomfortable. Almost twice as many male Marines as male Sailors reported being exposed to tobacco smoke for one or more hours a day in their immediate work or living area in the last 30 days. Female Marines were more likely to be exposed in their work area only and female Sailors are more likely to be exposed in their living area only. One quarter of the sample reported being in one or more medical surveillance program. The most frequent programs for both Navy and Marine Corps personnel for both men and women were noise and asbestos programs.

### **3.10 Women's reproductive health**

Table XXV shows the prevalence of female-specific conditions in the last 3 months regardless of whether they resulted in a visit to sick call or a health care provider. Among both Navy and Marine Corps women, menstrual problems and premenstrual symptoms headed the list, being reported by more than half of the women in the sample. Abdominal pain and yeast or vaginal infections were also quite prevalent, being reported by approximately 25% of the women. Marines reported significantly more infection and vaginal rash than Sailors.

As shown in Table XXVI, women on the whole had good rates of disease prevention behaviors. About 90% of the women over 40 years of age had had a mammogram in the last 5 years and had received training from a health care provider on breast self-examination. About 70% had had their breasts examined by a physician or nurse and had had a Pap smear less than one year ago. Only 6% had ever had an operation to remove a noncancerous breast lump, and 40% had had a non-normal Pap result at some time in their lives.

Table XXVII shows responses to questions regarding women's access to OB/GYN care. The majority of women (i.e., 75%) knew where to get information about pregnancy and possible

risks from their job and job environment, and most reported being given enough time off their jobs to be seen in OB/GYN when necessary. About 16% of the Navy women and 22% of the Marine Corps women felt that when they were pregnant, there were not enough OB/GYN trained personnel available to see them when necessary. About 14% of the Navy women and 18% of the Marine Corps women reported difficulty receiving the kind of OB/GYN care they would like while on OCONUS orders. Marines reported significantly less access than Sailors on all items.

As shown in Table XXVIII, women who had used OB/GYN services appeared generally satisfied with them. About 12% of the Navy women and 14% of the Marine Corps women reported being dissatisfied or very dissatisfied with some aspect of their OB/GYN care. Again, Marine Corps women were more dissatisfied than Navy women were with almost all aspects of their care. The greatest dissatisfaction for both Sailors and Marines was with the time they waited at the facility to see the provider and the priority they were shown as active-duty members. They were most satisfied with the amount of privacy during the visit, the quality of medical services, and the consideration and respect shown them.

Tables XXIX and XXX show the pregnancy and childbearing history and status of the Navy and Marine Corps women respondents. Eighteen percent of the Sailors and 21% of the Marines reported being pregnant within the past year. Of those, 32% reported pregnancy complications, 21% reported having childbirth problems, 16.5% had a miscarriage, and 10% an elected abortion. Eight percent of the total sample reported problems becoming pregnant, and 53% had become pregnant since being on active duty. About 5% of the Navy women and 9% of the Marine Corps women were currently pregnant; overall, 34% were unplanned. This is in comparison with an estimated 56% of unintended (unwanted plus mistimed) pregnancies in the United States as a whole.<sup>49</sup> Marines had both a significantly higher pregnancy rate and significantly more unplanned pregnancies (almost half of all their current pregnancies) than Sailors. In a logistic regression model that controlled for age, marital status, race, and education, Marines remained at increased probability for pregnancy than Sailors (Odds Ratio = 1.65; 95% confidence interval, 1.18-2.32). There were no differences between Sailors and Marines in the total number of times they had been pregnant, the number of children they had, their attitudes

toward being pregnant in the next year, their babies' health, or their breast-feeding practices. Navy women however, reflecting their older age, were significantly more likely to have had a hysterectomy or be menopausal, and to have taken replacement estrogen in the last 30 days.

As shown in Table XXX, 22% of the Navy women and 25% of the Marine Corps women had missed a period in the last 30 days, whereas 9% of the Navy women and 13% of the Marine Corps women had a pregnancy test in the last month. Four was the average number of live births among women with at least one child. Only 6% of the women reported having a premature baby or a baby that remained in the hospital after she came home, and only 1% of the women rated their child less healthy compared with other children their age.

#### 4. CONCLUSION

Although relatively low rates of disorder were found in the military populations examined, female Sailors and Marines, similar to civilians, tend to have higher rates of physical and mental conditions, poorer perceptions of their health status, and greater health care and medication use than their male counterparts. These issues must be taken into account when planning to accommodate greater numbers of women into the Navy and Marine Corps. Navy women perceived themselves to be healthier and less stressed than Marine Corps women. This would seem to be an area for further investigation. It is of interest that a few chronic physical conditions appear to be more prevalent among this military sample than reported among civilians. Although we have no ready explanation for the higher rate of heart murmur, conditions such as hemorrhoids, varicose veins, hearing problems, anemia, and migraines may be related to occupational/environmental and lifestyle factors unique to this population that should be explored in future studies. Although women were generally satisfied with military health care services, two areas that may be targeted for improvement are services to Marines and the waiting time at a facility to see a provider.

This study also examined myriad potential risk factors. Although overall, gender differences tended to be small, women reported more psychosocial risk factors, such as greater

stress, less social support, and a lower quality of life than men. They were more likely to have been abused prior to service entry and to be concerned with their weight. They also tended to consider eating enjoyment and convenience more important than men when purchasing food, and eating snacks more frequently before meals, which may result in their intake of higher fat-containing processed and prepared foods. Although they engaged in several healthier behaviors, such as less smoking and drinking, these may be offset in terms of their lifestyle risks by their less amount of exercise. Women reported overall less exposure to occupational and environmental hazards than men. However, the relationships between illness and adverse reproductive outcomes and those exposures that were the most prevalent, such as microwave exposure, heavy lifting, VDTs, and noise should be targeted for further occupational epidemiological investigation. With regard to women's reproductive health, identified areas of potential concern include high levels of reported premenstrual symptoms, menstrual disorders, and unplanned pregnancies. A concurrent investigation is under way to evaluate potential risk factors and reproductive outcomes among these women.

This survey was designed to provide the means to evaluate the health status of women and men in the Navy and Marine Corps by providing the baseline for future comparisons, as the demographic profile of the military changes over the few years and as women move into traditionally male occupations. The data were collected in a methodology similar to the national surveys to facilitate comparisons with civilian populations. Such data may be used to reaffirm or guide current policies on occupation and medical care in the military. However, several limitations of this study should be noted. The low response rate reduces confidence in the generalizability of results to the full shore-based Navy and Marine Corps. On the other hand, the relative consistency of certain findings with previous studies, such as the distribution of particular lifestyle and psychosocial measures, strengthens the preceding results. For example, Navy men were found to give higher quality of life ratings than women for their lives as a whole in the Navywide H&PR Study.<sup>25</sup> Other consistencies between the studies showed women more likely to eat breakfast, snack between meals, and drink fewer caffeinated beverages than men.<sup>50</sup> In comparing the results of the two studies, it was also found that 13% fewer Navy men and women were current smokers, however men reported smoking an average of about 2.5 cigarettes

less and women only one cigarette less.<sup>25</sup> It is also of interest to note that the present study found lifetime rates of hypertension for men to be lower than in the 1988 data and higher for women but both considerably lower than the aging 1994 cohort.<sup>50</sup>

Other limitations of self-report surveys include memory errors and the tendency of such surveys to underestimate the prevalence of chronic conditions.<sup>51</sup> Further, although great effort was undertaken to include the most comprehensive, reliable, and brief risk factor measures available, some measures, such as the checklist of occupational exposure, lacked known psychometric properties and may have questionable validity in a community-based sample.<sup>52</sup>

Overall, this study has been instrumental in identifying areas needing further research in the aid of advancing Navy and Marine Corps women's health and readiness of military duty. It has found that in an overall young and healthy population, there are aspects of health care that can be improved and areas where prevention and intervention efforts should be optimized. These data may serve as baseline health indicators for future studies and analyses of naval service personnel. A new study has been initiated that will provide comparison data across all service branches, including reserve components.

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Address reprint requests to: Laurel Lockwood Hourani, Ph.D., M.P. H., Head, Division of Health Sciences, Naval Health Research Center, P. O. Box 85122, San Diego, CA 92186-5122 (E-mail: [hourani@nhrc.navy.mil](mailto:hourani@nhrc.navy.mil)).

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**TABLE I**  
**DEMOGRAPHIC AND SERVICE VARIABLES BY GENDER**

	Women (n = 5068)	Men (n = 4788)	Total (n = 9856)	p value*
Age, mean (SE)	29.4 (0.3)	30.2 (0.4)	30.1 (0.3)	.056
Race, % (SE)				
White	61.6 (1.1)	69.5 (1.3)	68.5 (1.2)	.000
Black	21.2 (0.8)	12.4 (0.6)	13.4 (0.5)	
Other	13.6 (0.8)	15.3 (1.3)	15.1 (1.2)	
Education, % (SE)				
≤ High school	27.9 (1.6)	40.6 (1.8)	39.2 (1.7)	.000
Some college/trade	44.3 (1.3)	35.1 (1.5)	36.1 (1.4)	
College graduate or more	24.0 (2.2)	19.7 (1.8)	20.2 (1.8)	
Marital status, % (SE)				
Married/cohabitating	55.0 (1.0)	64.8 (1.7)	63.7 (1.5)	.000
Separated/widowed/divorced	15.7 (0.8)	8.4 (0.5)	9.2 (0.4)	
Single	28.5 (0.9)	25.9 (1.8)	26.2 (1.6)	
Living with spouse at present duty location, % of married (SE)	91.4 (0.7)	90.7 (0.8)	90.8 (0.7)	.510
Children < 21 living in household, % (SE)				
None	48.9 (1.2)	44.2 (1.2)	44.7 (1.1)	.000
1-2 children	42.1 (0.8)	39.6 (1.1)	39.8 (0.9)	
3 or more children	6.0 (0.2)	11.5 (0.4)	10.9 (0.1)	
Age first child born of those with any birth, % (SE)				
< 20 years	15.6 (0.9)	11.8 (1.0)	12.2 (0.9)	.001
20-24 years	47.8 (1.3)	42.5 (2.0)	43.1 (1.8)	
25+ years	36.5 (1.4)	45.7 (2.1)	44.7 (1.9)	
Branch of service, % (SE)				
Navy	84.2 (1.3)	57.1 (2.5)	60.3 (2.3)	.000
Marine Corps	15.8 (1.3)	42.9 (2.5)	39.7 (2.3)	
Paygrade, % (SE)				
Enlisted	81.8 (2.3)	83.4 (1.8)	83.2 (1.8)	.308
Officer	17.9 (2.3)	16.4 (1.8)	16.6 (1.8)	
Command location, % (SE)				
CONUS	79.7 (0.9)	79.9 (1.7)	79.9 (1.6)	.995
OCONUS	15.9 (0.8)	15.9 (1.5)	15.9 (1.4)	
Yrs. in service, mean (SE)	8.4 (0.2)	10.2 (0.3)	10.0 (0.3)	.000
Yrs. of ship duty, mean (SE)	0.6 (0.1)	2.5 (0.2)	2.3 (0.2)	.000
Yrs. of deployment, mean (SE)	0.3 (0.0)	2.1 (0.1)	1.9 (0.1)	.000
Served in foreign area,** % (SE)	37.3 (1.5)	64.7 (1.4)	61.5 (1.2)	.000

Note. Indicated sample sizes are unweighted; percentages based on weighted sample; missing cases not included, SE = standard error.

\*X<sup>2</sup> and t test statistics to evaluate gender differences. +Includes all Hispanics. \*\*Includes Persian Gulf, Somalia, Bangladesh, Haiti, other foreign areas.

TABLE II

PERCENT DISTRIBUTION OF NUMBER OF SELF-REPORTED MEDICAL CONDITIONS (LIFETIME AND CURRENT) AMONG NAVY AND MARINE CORPS MEN AND WOMEN (HAS A HEALTH CARE PROVIDER EVER TOLD YOU THAT YOU HAD ANY OF THE FOLLOWING?/ STILL HAVE?)

Number of Conditions	Lifetime Conditions			Current Conditions		
	Women (n = 4158)	Men (n = 3904)	Total (n = 8062)	Women (n = 910)	Men (n = 844)	Total (n = 1754)
Navy						
0	13.0	19.8	18.7	39.0	46.9	45.6
1	16.9	21.6	20.9	24.3	23.2	23.4
2	16.7	17.1	17.0	15.7	14.3	14.5
3	14.3	14.4	14.3	9.7	7.9	8.2
4	10.9	9.6	9.8	5.4	3.4	3.7
5	8.8	6.0	6.5	2.5	2.0	2.1
6+	18.9	11.0	12.3	2.8	1.7	1.9
At least one	86.5	79.7	80.8	60.3	52.6	53.9
Marine Corps						
0	12.4	25.8	25.2	39.6	53.4	52.8
1	17.0	24.8	24.4	28.3	26.9	27.0
2	17.3	21.7	21.5	15.8	11.5	11.7
3	16.3	10.8	11.0	7.0	4.5	4.6
4	12.9	5.4	5.8	4.4	2.1	2.2
5	8.9	4.6	4.8	1.7	0.4	0.4
6+	14.7	6.5	6.8	2.7	0.9	1.0
At least one	87.2	73.8	74.5	60.0	46.2	46.9
Total						
0	12.9	22.4	21.3	39.1	49.7	48.4
1	16.9	23.0	22.3	24.9	24.8	24.8
2	16.8	19.1	18.8	15.7	13.1	13.4
3	14.6	12.8	13.0	9.3	6.5	6.8
4	11.2	7.8	8.2	5.2	2.8	3.1
5	8.9	5.4	5.8	2.4	1.3	1.5
6+	18.2	9.0	10.1	2.8	1.4	1.5
At least one	86.6	77.2	78.3	60.3	49.9	51.1

\*Totals exclude missing cases and therefore may not equal 100%.

TABLE III

LIFETIME AND POINT PREVALENCE RATES\* OF MEDICAL CONDITIONS AMONG NAVY AND MARINE CORPS MEN AND WOMEN (HAS A HEALTH CARE PROVIDER EVER TOLD YOU THAT YOU HAD ANY OF THE FOLLOWING?/ STILL HAVE?)

Condition	Lifetime Prevalence			Point Prevalence		
	Men No.* (%)	Women No. (%)	Total No. (%)	Men No. (%)	Women No. (%)	Total No. (%)
Asthma						
Navy	226 (5.8)	280 (6.8)	506 (6.0)	66 (1.8)	141 (3.4)	207 (2.1)
Marine Corps	55 (6.3)	75 (8.2)	130 (6.4)	17 (2.3)	36 (3.7)	53 (2.3)
Civilian**	233 (7.8)	250 (7.5)	483 (7.6)	(3.9)	(6.3)	(5.1)
Chronic bronchitis						
Navy	129 (3.5)	294 (7.2)	423 (4.1)	22 (0.7)	56 (1.4)	78 (0.8)
Marine Corps	29 (4.0)	74 (7.7)	103 (4.2)	7 (1.0)	20 (2.1)	27 (1.1)
Civilian	128 (3.7)	219 (7.5)	347 (5.7)	(3.7)	(6.7)	(5.2)
Emphysema						
Navy	4 (0.1)	15 (0.4)	19 (0.1)	4 (0.1)	7 (0.1)	11 (0.1)
Marine Corps	5 (0.4)	1 (0.1)	6 (0.4)	3 (0.1)	0 (0.0)	3 (0.1)
Civilian	49 (1.7)	29 (0.8)	78 (1.2)	(0.5)	(0.3)	(0.4)
Chronic rhinitis or hay fever						
Navy	342 (9.0)	448 (10.6)	790 (9.3)	255 (7.0)	350 (8.2)	605 (7.2)
Marine Corps	73 (5.9)	63 (6.5)	136 (5.9)	57 (5.1)	50 (5.1)	107 (5.1)
Civilian	288 (10.3)	364 (12.5)	652 (11.4)	(11.7)	(12.8)	(12.3)
Other allergies						
Navy	613 (15.5)	997 (24.3)	1610 (16.9)	494 (12.7)	835 (20.2)	1329 (13.9)
Marine Corps	122 (13.0)	209 (22.3)	331 (13.4)	99 (9.9)	177 (18.8)	276 (10.3)
Pos test for TB						
Navy	383 (8.6)	214 (5.3)	597 (8.0)	160 (3.4)	100 (2.4)	260 (3.3)
Marine Corps	45 (2.6)	41 (4.8)	86 (2.7)	15 (0.7)	21 (2.5)	36 (0.8)
Skin cancer						
Navy	53 (1.2)	43 (1.0)	96 (1.1)	14 (0.3)	7 (0.2)	21 (0.3)
Marine Corps	12 (0.7)	10 (1.0)	22 (0.7)	2 (0.1)	2 (0.2)	4 (0.1)
Civilian	42 (1.6)	5 (2.6)	93 (2.1)	(0.8)	(0.4)	(0.3)
Breast cancer						
Navy	0 (0.0)	13 (0.4)	13 (0.1)	0 (0.0)	5 (0.1)	5 (0.0)
Marine Corps	0 (0.0)	1 (0.1)	1 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Civilian	N/A			N/A	(0.4)	(0.4)
Other cancer						
Navy	18 (0.5)	125 (3.0)	143 (0.9)	3 (0.1)	12 (0.3)	15 (0.1)
Marine Corps	5 (0.5)	45 (4.9)	50 (0.7)	1 (0.0)	5 (0.4)	6 (0.0)
Civilian				(0.3)	(0.4)	(0.4)
Heart disease/Other heart problems						
Navy	81 (2.1)	95 (2.3)	176 (2.1)	56 (1.5)	66 (1.6)	122 (1.5)
Marine Corps	10 (0.3)	19 (2.5)	29 (0.4)	7 (0.2)	13 (1.8)	20 (0.3)
Civilian				(7.4)	(5.1)	(6.2)
Hypertension (High blood pressure)						
Navy	324 (8.0)	241 (5.9)	565 (7.7)	178 (4.2)	81 (2.0)	259 (3.8)
Marine Corps	54 (4.3)	30 (3.3)	84 (4.2)	23 (2.1)	8 (0.9)	31 (2.0)
Civilian	655 (18.2)	734 (19.3)	1389 (18.8)	(10.5)	(10.7)	(10.6)
High cholesterol						
Navy	614 (14.3)	315 (7.5)	929 (13.2)	349 (8.0)	148 (3.6)	497 (7.3)
Marine Corps	99 (5.8)	57 (6.0)	156 (5.8)	49 (3.5)	28 (2.4)	77 (3.4)

\*Unweighted sample size.

\*Rate per 100 (%) weighted to Navy and Marine Corps populations.

\*\*Based on data from NHANES III (3519 men and 3472 women, aged 18-63; 1988-1991) for lifetime conditions and 1994 NHIS for point prevalence (unweighted numbers not available).

TABLE III (CONT'D)

LIFETIME AND POINT PREVALENCE RATES\* OF MEDICAL CONDITIONS AMONG NAVY AND MARINE CORPS MEN AND WOMEN

Condition	Lifetime Prevalence			Point Prevalence		
	Men No.* (%)	Women No. (%)	Total No. (%)	Men No. (%)	Women No. (%)	Total No. (%)
Heart murmur						
Navy	265 (6.5)	464 (11.0)	729 (7.2)	116 (2.8)	269 (6.3)	385 (3.4)
Marine Corps	56 (5.5)	128 (13.8)	184 (5.8)	28 (2.2)	70 (7.7)	98 (2.4)
Civilian				(1.2)+	(2.5)+	(1.9)+
Anemia						
Navy	52 (1.3)	758 (18.4)	810 (4.1)	13 (0.3)	237 (5.9)	250 (1.2)
Marine Corps	10 (0.6)	176 (20.4)	186 (1.6)	2 (0.0)	57 (7.0)	59 (0.4)
Civilian**				(0.3)	(3.7)+	(2.0)+
Varicose veins						
Navy	80 (1.9)	280 (6.8)	360 (2.7)	73 (1.8)	244 (5.8)	317 (2.4)
Marine Corps	16 (0.9)	48 (5.0)	64 (1.1)	15 (0.9)	42 (4.3)	57 (1.0)
Civilian				(1.0)+	(5.2)	(3.1)+
Hernia or rupture						
Navy	347 (9.0)	105 (2.6)	452 (8.0)	32 (0.8)	14 (0.3)	46 (0.7)
Marine Corps	98 (7.3)	26 (2.7)	124 (7.1)	10 (0.7)	3 (0.3)	13 (0.7)
Civilian				(1.8)	(1.6)	(1.7)
Hemorrhoids						
Navy	525 (12.3)	623 (14.5)	1148 (12.6)	232 (5.5)	303 (7.1)	535 (5.7)
Marine Corps	127 (8.5)	119 (12.5)	246 (8.7)	58 (3.4)	51 (5.1)	109 (3.5)
Civilian				(4.3)+	(5.0)+	(4.7)+
Other blood circulation problems (includes scrotal varices)						
Navy	136 (3.3)	71 (1.6)	207 (3.0)	96 (2.4)	49 (1.1)	145 (2.2)
Marine Corps	29 (2.0)	22 (2.2)	51 (2.0)	21 (1.1)	14 (1.4)	35 (1.1)
Civilian				(0.4)+	(1.0)	(0.7)+
Diabetes						
Navy	15 (0.4)	54 (1.3)	69 (0.6)	13 (0.4)	5 (0.1)	18 (0.3)
Marine Corps	3 (0.1)	13 (1.4)	16 (0.1)	3 (0.1)	2 (0.2)	5 (0.1)
Civilian				(2.8)	(3.0)	(2.9)
Ulcer						
Navy	146 (3.8)	184 (4.6)	330 (3.9)	33 (0.9)	50 (1.1)	83 (0.9)
Marine Corps	35 (3.6)	27 (3.0)	62 (3.6)	7 (0.6)	8 (1.0)	15 (0.6)
Civilian				(2.1)	(2.1)	(2.1)
Bowel or intestinal trouble (e.g., colitis)						
Navy	128 (3.0)	246 (5.6)	374 (3.4)	50 (1.1)	132 (3.1)	182 (1.4)
Marine Corps	13 (1.3)	48 (5.1)	61 (1.5)	4 (0.1)	23 (2.5)	27 (0.2)
Civilian				(2.1)	(5.7)	(3.9)
Gallstones						
Navy	41 (1.0)	66 (1.6)	107 (1.1)	5 (0.1)	4 (0.1)	9 (0.1)
Marine Corps	4 (0.2)	11 (0.9)	15 (0.2)	1 (0.0)	0 (0.0)	1 (0.0)
Civilian	62 (1.4)	271 (6.0)	333 (3.7)	(0.2)	(0.8)	(0.5)

\*Unweighted sample size.

\*Rate per 100 (%) weighted to Navy and Marine Corps populations.

\*\*Based on data from NHANES III (3519 men and 3472 women, aged 18-63; 1988-1991) for lifetime conditions and 1994 NHIS for point prevalence (unweighted numbers not available).

+Comparison to standardized (age- and sex-adjusted) combined Navy and Marine Corps rates significant at  $p < .05$  (heart murmur females = 10.00; heart murmur males = 3.44, heart murmur total = 7.03; anemic females = 6.14, anemia total = 3.57; varicose veins in males = 2.66, varicose veins total = 4.97; hemorrhoids in males = 10.25, hemorrhoids in females = 10.24, hemorrhoids total = 10.25; other blood circulation problems in males = 2.86, other blood circulation problems total = 2.21).

TABLE III (CONT'D)

LIFETIME AND POINT PREVALENCE RATES\* OF MEDICAL CONDITIONS AMONG NAVY AND MARINE CORPS MEN AND WOMEN

Condition	Lifetime Prevalence			Point Prevalence		
	Men No. (%)	Women No. (%)	Total No. (%)	Men No. (%)	Women No. (%)	Total No. (%)
Liver disease (includes hepatitis, cirrhosis)						
Navy	138 (3.3)	141 (3.1)	279 (3.2)	21 (0.4)	20 (0.4)	41 (0.4)
Marine Corps	24 (1.4)	34 (3.5)	58 (1.5)	1 (0.0)	3 (0.2)	4 (0.0)
Civilian				(0.4)	(0.2)	(0.3)
Repeated kidney infections						
Navy	24 (0.6)	202 (4.7)	226 (1.3)	4 (0.1)	16 (0.4)	20 (0.1)
Marine Corps	4 (0.7)	53 (5.6)	57 (1.0)	0 (0.0)	4 (0.4)	4 (0.0)
Civilian				(0.1)	(1.1)	(0.6)
Kidney stones						
Navy	143 (3.5)	66 (1.5)	209 (3.2)	15 (0.3)	9 (0.2)	24 (0.3)
Marine Corps	20 (2.0)	12 (0.9)	32 (2.0)	0 (0.0)	2 (0.1)	2 (0.0)
Civilian				(0.8)	(0.7)	(0.8)
Bladder trouble (includes urinary tract infection)						
Navy	458 (11.3)	1909 (45.9)	2367 (16.9)	15 (0.4)	78 (1.9)	93 (0.6)
Marine Corps	89 (7.6)	407 (46.1)	496 (9.4)	3 (0.1)	25 (2.6)	28 (0.2)
Civilian**				(0.4)	(2.4)	(1.4)
Pelvic inflammatory disease						
Navy	n/a	206 (4.8)	206 (0.8)	n/a	14 (0.3)	14 (0.0)
Marine Corps	n/a	43 (5.2)	43 (0.2)	n/a	3 (0.3)	3 (0.0)
Civilian				n/a	(0.2)	(0.2)
Gonorrhea						
Navy	402 (9.9)	110 (2.8)	512 (8.8)	3 (0.1)	1 (0.0)	4 (0.1)
Marine Corps	82 (6.2)	21 (2.5)	103 (6.0)	1 (0.0)	0 (0.0)	1 (0.0)
Syphilis						
Navy	28 (0.7)	24 (0.6)	52 (0.7)	2 (0.0)	0 (0.0)	2 (0.0)
Marine Corps	1 (0.4)	3 (0.3)	4 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)
Chlamydia						
Navy	107 (2.8)	524 (13.4)	631 (4.5)	1 (0.0)	8 (0.2)	9 (0.1)
Marine Corps	24 (2.5)	112 (13.5)	136 (3.0)	0 (0.0)	0 (0.0)	0 (0.0)
Herpes or genital warts						
Navy	241 (5.8)	453 (10.7)	694 (6.6)	102 (2.5)	177 (4.3)	279 (2.8)
Marine Corps	44 (4.2)	105 (11.5)	149 (4.5)	20 (1.2)	51 (5.5)	71 (1.4)
Sterility/infertility						
Navy	68 (1.5)	164 (3.9)	232 (1.9)	59 (1.2)	119 (2.8)	178 (1.5)
Marine Corps	17 (1.0)	29 (3.2)	46 (1.1)	12 (0.8)	20 (2.2)	32 (0.8)
Thyroid disease						
Navy	16 (0.3)	126 (2.9)	142 (0.7)	7 (0.1)	84 (1.9)	91 (0.4)
Marine Corps	6 (0.6)	12 (1.1)	18 (0.6)	3 (0.1)	8 (0.7)	11 (0.2)
Civilian				(0.5)	(3.2)	(1.9)
Arthritis						
Navy	223 (5.1)	240 (5.4)	463 (5.2)	198 (4.6)	215 (4.8)	413 (4.6)
Marine Corps	37 (2.2)	46 (4.5)	83 (2.3)	32 (2.1)	40 (3.8)	72 (2.2)
Civilian	329 (9.2)	544 (14.3)	873 (11.8)	(8.6)	(13.6)	(11.2)

\*Unweighted sample size.

\*Rate per 100 (%) weighted to Navy and Marine Corps populations.

\*\*Based on data from NHANES III (3519 men and 3472 women, aged 18-63; 1988-1991) for lifetime conditions and NHIS 1994 for point prevalence (unweighted numbers not available).

TABLE III (CONT'D)

LIFETIME AND POINT PREVALENCE RATES\* OF MEDICAL CONDITIONS AMONG NAVY AND MARINE CORPS MEN AND WOMEN

Condition	Lifetime Prevalence			Point Prevalence		
	Men No. (%)	Women No. (%)	Total No. (%)	Men No. (%)	Women No. (%)	Total No. (%)
Neuralgia						
Navy	7 (0.1)	16 (0.4)	23 (0.2)	6 (0.1)	9 (0.2)	15 (0.1)
Marine Corps	0 (0.0)	3 (0.3)	3 (0.0)	0 (0.0)	1 (0.1)	1 (0.0)
Civilian				(0.1)	(0.4)	(0.2)
Anorexia or bulimia (eating disorder) <sup>b</sup>						
Navy	12 (0.3)	93 (2.3)	105 (0.7)	6 (0.2)	19 (0.5)	25 (0.2)
Marine Corps	0 (0.0)	24 (2.8)	24 (0.1)	0 (0.0)	7 (0.6)	7 (0.0)
Civilian <sup>b</sup>				(0.2)	(1.3)	(0.9)
Migraines						
Navy	213 (5.6)	651 (15.7)	864 (7.2)	105 (2.8)	427 (10.3)	532 (4.0)
Marine Corps	37 (3.7)	132 (14.9)	169 (4.2)	24 (2.1)	82 (9.0)	106 (2.4)
Civilian				(2.7)	(9.1)+	(6.0)+
Head injury (involving stitches or unconsciousness)						
Navy	1087 (27.8)	583 (13.8)	1670 (25.5)	11 (0.3)	10 (0.2)	21 (0.3)
Marine Corps	248 (29.9)	140 (15.1)	388 (29.2)	3 (0.4)	4 (0.4)	7 (0.4)
Depression						
Navy	166 (4.3)	350 (8.4)	516 (4.9)	47 (1.3)	116 (2.9)	163 (1.5)
Marine Corps	23 (2.9)	73 (7.7)	96 (3.1)	6 (0.5)	27 (2.7)	33 (0.6)
Civilian <sup>c</sup>				(7.7)	(12.9)	(10.3)
Other psychological condition						
Navy	73 (1.9)	100 (2.2)	173 (2.0)	21 (0.6)	36 (0.8)	57 (0.6)
Marine Corps	11 (1.3)	23 (2.5)	34 (1.4)	5 (0.8)	10 (0.8)	15 (0.8)
Speech problems						
Navy	102 (2.9)	97 (2.5)	199 (2.8)	30 (1.0)	15 (0.4)	45 (0.9)
Marine Corps	22 (4.0)	16 (1.7)	38 (3.9)	3 (0.4)	5 (0.5)	8 (0.4)
Civilian**				(1.4)	(0.5)	(0.9)
Hearing loss/problems						
Navy	674 (16.7)	297 (6.7)	971 (15.1)	546 (13.4)	236 (5.2)	782 (12.1)
Marine Corps	161 (17.1)	85 (8.9)	246 (16.7)	138 (14.5)	59 (6.1)	197 (14.1)
Civilian				(12.6)+	(7.3)	(9.9)+
Vision impairment/problems						
Navy	971 (24.0)	1128 (26.4)	2099 (24.4)	793 (19.7)	923 (21.6)	1716 (20.0)
Marine Corps	204 (24.1)	227 (24.0)	431 (24.1)	163 (18.8)	193 (20.4)	356 (18.9)
Periodontal disease (gum disease)						
Navy	454 (10.4)	350 (7.7)	804 (10.0)	252 (6.0)	172 (3.7)	424 (5.6)
Marine Corps	93 (6.0)	64 (6.5)	157 (6.1)	51 (3.2)	32 (2.6)	83 (3.2)

\*Unweighted sample size.

<sup>b</sup>Pemberton AR, Vernon SW, Lee ES. Prevalence and correlates of bulimia nervosa and bulimic behaviors in a racially diverse sample of undergraduate students in two universities in southeast Texas. *Amer J Epidemiology*. 1996; 144:450-5.<sup>c</sup>Civilian rates are from: Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States. (National Comorbidity Survey, 1990-1992). *Arch Gen Psychiatry* 1994; 51:8-19.

\*Rate per 100 (%) weighted to Navy and Marine Corps populations.

\*\*Based on data from NHANES III (3519 men and 3472 women, aged 18-63; 1988-1991) for lifetime conditions and NHIS 1994 for point prevalence (unweighted n's not available).

+Comparison to standardized (age and sex-adjusted) combined Navy and Marine Corps rates significant at  $p < .05$  (migraines in females = 12.78, migraines total = 8.21; hearing loss/problems males = 21.13, hearing loss/problems total = 13.86).

**TABLE IV**  
**ONE-MONTH PREVALENCE (IN PERCENT) OF PHYSICAL SYMPTOMS AMONG**  
**NAVY AND MARINE CORPS MEN AND WOMEN**

Navy	Women	Men	Total	Sample Size	Weighted Size
0	11.5	17.6	16.6	1181	30420
1	10.0	15.3	14.5	996	26434
2	11.8	14.1	13.8	1054	25170
3	11.2	11.1	11.1	911	20295
4	10.0	9.1	9.3	776	16915
5	9.7	7.7	8.1	705	14740
6	7.4	7.3	7.3	582	13343
7	6.5	4.5	4.8	453	8807
8	5.5	3.8	4.1	364	7435
9	4.5	2.6	2.9	289	5313
10	3.2	1.8	2.0	194	3709
11+	8.4	4.7	5.3	531	9672
At least one	88.2	82.0	83.0	6855	151835
Marine Corps					
0	8.9	16.3	16.0	257	19277
1	11.8	14.2	14.1	234	17021
2	9.1	10.3	10.3	199	12400
3	9.7	11.2	11.2	183	13452
4	11.0	11.9	11.9	183	14303
5	8.3	8.5	8.5	148	10230
6	7.7	6.3	6.4	123	7727
7	4.7	3.1	3.2	87	3881
8	7.2	4.8	4.9	92	5870
9	4.4	3.6	3.6	64	4340
10	4.0	2.8	2.9	59	3444
11+	12.8	6.2	6.5	159	7841
At least one	90.7	83.0	83.3	1531	100509
Total					
0	11.1	17.1	16.4	1438	49697
1	10.3	14.8	14.3	1230	43455
2	11.4	12.5	12.4	1253	37570
3	11.0	11.1	11.1	1094	33747
4	10.2	10.3	10.3	959	31218
5	9.5	8.1	8.2	853	24971
6	7.5	6.9	6.9	705	21070

**TABLE IV (CONT'D)**  
**ONE-MONTH PREVALENCE (IN PERCENT) OF PHYSICAL SYMPTOMS AMONG**  
**NAVY AND MARINE CORPS MEN AND WOMEN**

Total	Women	Men	Total	Sample Size	Weighted Size
7	6.2	3.9	4.2	540	12688
8	5.7	4.2	4.4	456	13305
9	4.5	3.0	3.2	353	9653
10	3.3	2.2	2.4	253	7153
11+	9.1	5.3	5.8	690	17513
At least one	88.6	82.4	83.1	8386	252344

**TABLE V**  
**ONE-MONTH PREVALENCE RATES OF CURRENT MEDICAL CONDITIONS AMONG NAVY AND MARINE CORPS MEN AND**  
**WOMEN (HAVE YOU EXPERIENCED ANY OF THE CONDITIONS LISTED BELOW ANY TIME IN THE PAST 30 DAYS**  
**REGARDLESS OF WHETHER THEY RESULTED IN A VISIT TO SICK CALL OR A HEALTH CARE PROVIDER?)**

	Rate No. * (%)	Men			Rate No. * (%)	Women		
		Nothing %	Type of Care Self-Care %	Medical Care %		Nothing %	Type of Care Self-Care %	Medical Care %
Common cold symptoms	2516 (55.8)	17.9	70.6	8.3	2954 (58.6)	11.8	72.2	13.3
Dizziness	309 (7.1)	45.7	27.6	20.2	751 (15.0)	44.9	29.7	22.2
Chills	434 (10.5)	20.4	57.1	17.9	855 (16.7)	21.1	54.5	20.5
Cough	1570 (35.5)	18.9	64.5	12.2	1995 (39.6)	14.8	63.5	17.8
Sore throat	1427 (31.6)	15.6	65.0	15.4	2012 (39.9)	12.5	63.8	19.4
Fever	785 (18.0)	6.8	68.9	20.7	1082 (21.1)	7.0	62.7	26.2
Flu	693 (14.9)	4.4	66.4	25.2	800 (15.6)	5.2	55.3	34.0
Diarrhea at least 3 days	220 (4.7)	20.5	41.9	33.8	266 (5.6)	19.5	46.5	31.4
Stomach problems	422 (8.5)	24.0	45.0	27.2	752 (14.9)	25.3	49.9	22.0
Constipation	212 (4.0)	37.9	57.3	3.8	646 (13.0)	25.5	63.0	8.5
Indigestion	592 (11.2)	23.7	69.1	4.6	684 (13.3)	19.2	73.8	3.8
Nausea/vomiting	295 (6.6)	25.2	47.7	24.5	794 (15.7)	26.6	43.9	26.6
Sinus trouble	1229 (27.7)	18.3	64.4	12.7	1624 (32.3)	11.8	63.6	21.4
Hay fever	215 (4.3)	14.3	67.5	15.2	283 (5.7)	13.3	64.4	16.3
Shortness of breath	166 (3.5)	51.3	16.8	25.3	330 (6.7)	40.6	30.0	26.4
Hoarseness	225 (4.9)	36.8	49.7	10.6	463 (9.2)	26.8	51.1	18.1
Sleeping problems	577 (13.8)	67.5	21.9	7.7	925 (18.3)	57.8	32.5	7.0
Headaches	1459 (30.9)	14.0	78.5	4.5	2463 (49.2)	9.3	79.1	8.9
Skin problems	475 (9.9)	16.5	46.8	35.3	666 (13.2)	13.3	47.5	35.9
Muscle sprain or strain	832 (17.0)	15.3	50.2	31.9	654 (12.6)	18.3	42.5	36.5
Back problems	891 (18.9)	31.5	38.4	27.5	1112 (22.2)	30.4	41.3	25.7
ringing in the ears	438 (11.2)	73.1	11.1	13.1	368 (7.5)	70.9	12.6	11.8
Irritated eyes	480 (10.3)	38.1	47.9	10.0	681 (13.2)	34.5	48.0	14.6
Trouble seeing with one or both eyes even if wearing glasses	218 (4.5)	49.5	9.3	35.2	309 (6.2)	51.9	10.9	33.9
Teeth/gum/dental problems	520 (10.2)	15.6	10.4	69.0	592 (11.4)	18.5	12.4	65.5
Broken bones	91 (1.8)	1.7	1.5	93.9	56 (1.1)	1.6	3.7	90.8

\*Unweighted sample size; percentages based on weighted sample.

TABLE VI

ONE-MONTH AND ONE-YEAR PREVALENCE OF PRESCRIBED AND NONPRESCRIBED MEDICATION USE AMONG NAVY AND MARINE CORPS PERSONNEL (WAS THERE ANY TIME WHEN YOU USED A FAIR AMOUNT OF ANY OF THESE MEDICATIONS?)

Medication	Males		Females		Total	
	Last Month No.* (%)	Last Year No. (%)	Last Month No. (%)	Last Year No. (%)	Last Month No. (%)	Last Year No. (%)
Allergy pills	350(6.9)	656(12.9)	538(10.2)	985(19.2)	888(7.3)	1641(13.6)
Aspirin or other pain killers	2257(47.5)	2855(59.6)	2951(58.1)	3581(70.7)	5208(48.8)	6436(60.8)
Diet pills	109(2.7)	150(4.0)	297(5.9)	551(10.9)	406(3.1)	701(4.8)
Laxatives	136(3.1)	231(4.7)	393(8.0)	743(14.9)	529(3.7)	974(5.9)
Sleeping pills	104(2.2)	151(3.2)	183(3.5)	333(6.5)	287(2.3)	484(3.6)
Stomach medicine	529(10.5)	772(15.0)	647(12.5)	991(19.3)	1176(10.7)	1763(15.5)
Tranquilizers (Valium, Librium)	66(1.7)	116(2.6)	66(1.2)	143(2.7)	132(1.6)	259(2.7)
Antibiotics	516(12.0)	1264(26.4)	882(17.6)	2054(40.3)	1398(12.6)	3318(28.0)
Antimalarial pills	54(1.4)	122(3.1)	36(0.7)	61(1.2)	90(1.3)	183(2.9)
Pyridostigmine (pills to protect you from a chemical weapon attack)	48(1.2)	54(1.3)	27(0.5)	31(0.6)	75(1.1)	85(1.3)
Other anti-CBW pills or agents	48(1.2)	53(1.5)	29(0.5)	32(0.6)	77(1.1)	85(1.4)
Prescribed medicine for psych. condition	73(1.5)	91(2.0)	115(2.1)	163(3.1)	188(1.6)	254(2.1)
Ciprofloxacin (Cipro or anti-anthrax pills)	66(1.4)	90(1.8)	49(0.9)	82(1.5)	115(1.3)	172(1.8)
Other medicine	872(18.6)	1154(24.7)	1440(28.0)	1793(34.9)	2312(19.7)	2947(25.9)
Other vaccine	530(11.5)	1021(21.3)	566(11.5)	1125(22.3)	1096(11.5)	2146(21.4)

\*Unweighted sample size; percentages based on weighted sample.

**TABLE VII**  
**HEALTH CARE UTILIZATION DURING PAST 12 MONTHS: MEAN NUMBER OF VISITS TO**  
**MILITARY MEDICAL TREATMENT FACILITY**

	Navy		Marine Corps	
	Women	Men	Women	Men
Illness or injury	2.5	1.7*	3.0+	2.1+*
Follow-up for illness or injury	1.9	1.4*	2.4+	1.6*
General physical exam	0.7	0.6*	0.9+	0.6*
Rx refill only	1.8	0.8*	1.7	0.6+*
Eye exam only	0.5	0.4*	0.4+	0.4
Prenatal care	1.1	0.0*	1.3	0.0*
Same-day surgery	0.2	0.1*	0.2	0.2
Mental health	0.3	0.1*	0.2	0.1*
Emergency care	0.4	0.2*	0.5	0.3+*
Other type of care	0.6	0.3*	0.6	0.4
Total (Any reason)	9.7	5.6*	11.2	6.3*+

\*Sex differences significant at  $p < .05$ .

+Service differences significant at  $p < .05$ .

**TABLE VIII**  
**HEALTH CARE UTILIZATION DURING PAST 12 MONTHS: MEAN NUMBER OF VISITS**  
**TO CIVILIAN DOCTOR'S OFFICE OR OUTPATIENT CLINIC**

	Navy		Marine Corps	
	Women	Men	Women	Men
Illness or injury	0.2	0.1	0.2	0.2
Follow-up for illness or injury	0.1	0.1	0.1	0.1
General physical exam	0.0	0.0	0.1	0.0
Rx refill only	0.1	0.0*	0.1	0.0
Eye exam only	0.2	0.1*	0.2	0.1
Prenatal care	0.2	0.0*	0.4	0.0
Same-day surgery	0.0	0.0*	0.0	0.0
Mental health	0.1	0.1	0.0	0.1
Emergency care	0.1	0.0*	0.0	0.0
Other type of care	0.2	0.1*	0.2	0.0*
Total (any reason)	1.1	0.6*	1.3	0.7

Note. SE = standard error.

\*Sex differences significant at  $p < .05$ .

**TABLE IX**  
 PERCENT DISTRIBUTION OF AGREEMENT WITH CHARACTERISTICS OF MEDICAL PERSONNEL IN MILITARY  
 MEDICAL FACILITY BY GENDER AND SERVICE

	Navy		Marine Corps		Total
	Women (n = 4158)	Men (n = 3904)	Women (n = 910)	Men (n = 884)	(n = 9856)
Seemed warm and friendly to me	72	68*	67	67	68
Seemed interested in me as a person	58	55*	49+	47++	52
Treated me with appropriate respect	68	66	68	63**	65
Seemed to take my problem seriously	65	62*	60	61	62

Note. Indicated sample sizes are unweighted; percentages based on weighted sample; "agree" and "strongly agree" responses are combined.

\*t test between Navy men and women significant at  $p < .05$ .

\*\*t test between Marine Corps men and women significant at  $p < .05$ .

+t test between Navy and Marine Corps women significant at  $p < .05$ .

++t test between Navy and Marine Corps men significant at  $p < .05$ .

**TABLE X**  
**PERCENT DISTRIBUTION OF SATISFACTION WITH MEDICAL SERVICES (NON-OB/GYN) AT LAST VISIT**  
**AMONG SERVICE USERS IN 1995 AND 1989\***

	Very Satisfied	Satisfied	Neither Satisfied nor Dissatisfied	Dissatisfied	Very Dissatisfied
<b>Quality of medical services provided</b>					
95 Navy men	18	53	17	8	4
95 Navy women	22	54	13	7	3
89 Navy women	31	25	28	10	5
95 Marine Corps men	12	56	20	7	4
95 Marine Corps women	19	49	17	8	7
89 Marine Corps women	28	29	30	6	7
<b>Amount of time it took to get to medical facility</b>					
95 Navy men	20	50	17	7	6
95 Navy women	25	50	13	7	5
89 Navy women	49	25	15	5	4
95 Marine Corps men	21	47	22	5	4
95 Marine Corps women	24	46	16	7	6
89 Marine Corps women	55	22	13	5	5
<b>Amount of time waited at medical facility to see provider</b>					
95 Navy men	12	36	19	20	14
95 Navy women	16	41	15	16	12
89 Navy women	18	20	22	16	23
95 Marine Corps men	11	34	22	18	15
95 Marine Corps women	12	35	17	18	18
89 Marine Corps women	21	20	20	21	18
<b>Priority shown</b>					
95 Navy men	15	41	26	10	8
95 Navy women	18	41	21	11	10
89 Navy women	28	24	29	9	11
95 Marine Corps men	11	40	30	10	8
95 Marine Corps women	14	34	25	13	14
89 Marine Corps women	31	24	25	9	11
<b>Priority shown when had orders to deploy</b>					
95 Navy men	13	35	44	5	3
95 Navy women	13	32	46	5	4
95 Marine Corps men	10	38	39	7	6
95 Marine Corps women	12	31	47	5	5
<b>Variety of medical services available</b>					
95 Navy men	15	49	25	6	5
95 Navy women	17	49	21	9	5
89 Navy women	25	22	31	13	9
95 Marine Corps men	14	48	25	10	4
95 Marine Corps women	13	45	23	12	7
89 Marine Corps women	23	23	29	15	10
<b>Type of medical professionals seen</b>					
95 Navy men	16	49	23	8	4
95 Navy women	20	51	17	9	4
89 Navy women	32	26	24	12	6
95 Marine Corps men	14	50	25	7	4
95 Marine Corps women	15	47	21	11	6
89 Marine Corps women	29	29	25	9	7
<b>Amount of privacy had during visit</b>					
95 Navy men	18	55	19	6	2
95 Navy women	24	55	12	6	3
89 Navy women	38	27	19	11	5
95 Marine Corps men	15	54	20	7	4
95 Marine Corps women	25	51	13	8	3
89 Marine Corps women	37	28	21	10	4

**TABLE X (CONT'D)**  
**PERCENT DISTRIBUTION OF SATISFACTION WITH MEDICAL SERVICES (NON-OB/GYN) AT LAST VISIT**  
**AMONG SERVICE USERS IN 1995 AND 1989\***

	Very Satisfied	Satisfied	Neither Satisfied nor Dissatisfied	Dissatisfied	Very Dissatisfied
Consideration and respect shown					
95 Navy men	18	51	20	7	4
95 Navy women	23	52	15	6	4
89 Navy women	38	26	19	9	7
95 Marine Corps men	16	53	21	6	4
95 Marine Corps women	21	50	19	6	4
89 Marine Corps women	37	31	20	7	6
Timeliness of follow-up care					
95 Navy men	14	46	26	7	6
95 Navy women	18	47	20	8	6
89 Navy women	25	23	31	11	10
95 Marine Corps men	12	47	33	3	5
95 Marine Corps women	14	42	24	10	10
89 Marine Corps women	27	27	25	9	12

\*Source of 1989 data: Mahoney GS, Wright LC. 1989 DoD Women's Health Survey. Defense Manpower Data Center, Arlington, VA.

**TABLE XI**  
**PERCENT DISTRIBUTION OF OTHER HEALTH CARE CONCERNS BY GENDER AND SERVICE**

	Navy		Marine Corps		Total	
	Women (n = 4158)	Men (n = 3904)	Women (n = 910)	Men (n = 884)	Women (n = 5068)	Men (n = 4788)
Primary person who treats you at military MTF						
Doctor	54*+	47+	39*	26	52*	38
Physician's Assistant (PA)	18*+	13+	11*	7	17*	11
Corpsman	21*+	35+	45*	64	25*	47
Nurse	3*	1	2	1	3*	1
Other	1+	1	0	0	1	1
Waiting time to see provider after arriving at facility						
Less than 5 minutes	2*+	4	0*	3	2*	4
5-15 minutes	17+	16	10*	18	15	17
15-30 minutes	33	31	28	26	32	29
30-60 minutes	30	29	33	32	31	30
At least 1 hour	13+	15	20*	14	14	14
2 or more hours	5	4	7	5	5	5
Can ask someone in military medical system questions about a health concern on the telephone						
Yes	41*+	36	34	33	40*	35
No	26*	21	27*	23	26*	21
Don't know	32*	42	36	42	32*	42

Note. Indicated sample sizes are unweighted; percentages based on weighted sample, missing cases excluded.

\*Sex differences significant at  $p < 0.05$ .

+Service differences significant at  $p < 0.05$ .

TABLE XII

PERCEIVED HEALTH OF NAVY AND MARINE CORPS PERSONNEL AS MEASURED BY THE RAND HEALTH  
SURVEY SCALES MEANS AND STANDARD ERRORS (SCORE OF 100 = OPTIMAL HEALTH STATUS)

MOS Scale	Navy		Marine Corps	
	Women Mean (SE)	Men Mean (SE)	Women Mean (SE)	Men Mean (SE)
Role limitation due to physical health	82.0 (0.5)	87.7* (0.4)	75.4+ (1.3)	85.8* (1.1)
Role limitation due to emotional problem	87.2 (0.5)	90.8* (0.4)	84.5+ (1.1)	89.7* (1.3)
Energy/fatigue	55.7 (0.5)	62.2* (0.4)	52.9 (1.4)	60.1* (1.2)
Social functioning	82.0 (0.5)	86.5* (0.4)	79.0+ (1.3)	85.6* (1.4)
Pain	78.8 (0.3)	82.1* (0.4)	74.2+ (0.3)	79.0+* (1.2)
General health	76.3 (0.5)	78.5* (0.4)	74.8 (1.3)	78.7* (1.0)

\*Sex differences significant at  $p < .05$ .

+Service differences significant at  $p < .05$ .

**TABLE XIII**  
**PSYCHOSOCIAL FUNCTIONING OF NAVY AND MARINE CORPS PERSONNEL**  
**BY GENDER AND SERVICE**

	Navy		Marine Corps		Total Mean (SE)
	Women Mean (SE)	Men Mean (SE)	Women Mean (SE)	Men Mean (SE)	
CES-D	10.2 (0.3)	8.3* (0.2)	11.5 (0.8)	9.7*+ (0.5)	9.0 (0.3)
Hopkins-21	30.0 (0.2)	29.0* (0.2)	31.4+ (0.5)	30.8+ (0.7)	29.8 (0.3)
Quality of Life (Summary Score)	11.4 (0.1)	11.9* (0.1)	11.4 (0.2)	11.7 (0.2)	11.7 (0.1)
Spielberger Anger (10 items)	17.7 (0.1)	17.3* (0.1)	18.1 (0.2)	18.5+ (0.4)	17.8 (0.2)
T-Anger/t	6.1 (0.1)	6.0* (0.0)	6.7+ (0.1)	6.4 (0.2)	6.2 (0.1)
T-Anger/R	8.6 (0.1)	8.4* (0.0)	8.4+ (0.1)	8.8 (0.2)	8.6 (0.1)
Spielberger Anxiety	35.7 (0.2)	34.0* (0.2)	36.3 (0.7)	35.1* (0.6)	34.6 (0.3)
Social Network Index (Summary Score)	3.6 (0.1)	4.4* (0.1)	3.2+ (0.1)	3.6*+ (0.2)	4.0 (0.1)
Marital Conflict Score	1.9 (0.0)	1.8* (0.0)	1.9 (0.0)	1.8* (0.1)	1.8 (0.0)
Rosenberg Self-Esteem*	1.6 (0.0)	1.5* (0.0)	1.6 (0.0)	1.5* (0.0)	1.5 (0.0)

**Note.** SE = standard error.

\*(Average of 9 items).

\*Sex differences significant at  $p < .05$ .

+Service differences significant at  $p < .05$ .

**TABLE XIV**  
**PERCENT DISTRIBUTION OF STRESS AND COPING AMONG NAVY AND MARINE CORPS PERSONNEL**

	Women (n = 4158)	Navy Men (n = 3904)	Total (n = 8062)	Women (n = 910)	Marine Corps Men (n = 884)	Total (n = 1794)
Think about your life over the past 7 days. On the whole, how much stress do you think is in your life right now?+						
None at all	4.6	6.4	6.1	5.8	6.3	6.3
A little bit	28.6	30.1	29.8	26.4	28.8	28.7
Moderate amount	32.9	35.0	34.6	30.9	32.0	31.9
Quite a bit	25.4	22.3	22.8	25.9	25.1	25.1
Extreme amount	7.8	5.7	6.1	10.2	7.7	7.8
		$X^2_4 = 28.3, p = .0002$			$X^2_4 = 17.9, p = .0043$	
Stress has affected my personal life: +						
Not at all	23.2	31.5	30.2	26.3	31.8	31.5
A little bit	41.3	40.0	40.2	36.0	37.8	37.8
Moderate amount	20.3	16.8	17.4	20.0	18.0	18.1
Quite a bit	10.8	8.8	9.1	12.4	9.2	9.4
Extreme amount	3.7	2.4	2.6	4.5	3.0	3.1
Stress has affected my job performance:		$X^2_4 = 36.1, p = .0000$			$X^2_4 = 10.1, NS$	
Not at all	51.2	55.4	54.7	50.5	53.4	53.2
A little bit	33.4	30.9	31.3	33.8	32.0	32.1
Moderate amount	9.6	8.8	8.9	9.4	10.0	10.0
Quite a bit	3.8	3.3	3.4	4.4	2.9	3.0
Extreme amount	1.1	1.1	1.1	1.1	1.2	1.2
How well have you coped with stress?		$X^2_4 = 6.9, NS$			$X^2_4 = 1.3, NS$	
Very poorly	1.5	1.1	1.2	2.0	1.1	1.2
Somewhat poorly	5.5	4.4	4.6	4.5	4.5	4.5
In-between (neutral)	23.1	15.6	16.8	21.9	18.0	18.2
Somewhat well	31.2	30.8	30.9	28.9	26.7	26.8
Very well	37.8	47.3	45.8	41.9	49.2	48.8
		$X^2_4 = 77.0, p = .0000$			$X^2_4 = 5.3, NS$	

Note. Indicated sample sizes are unweighted; percentages based on weighted sample.

+Service differences for women only significant at  $p < .05$ .

**TABLE XV**  
**PERCENT DISTRIBUTION OF LIFE EVENTS BY GENDER AND SERVICE**

	Navy		Marine Corps		Total
	Women (n = 4158)	Men (n = 3904)	Women (n = 910)	Men (n = 884)	(n = 9856)
Serious problems had to handle in past year					
Several	10	11	12	9	10
Some	13	13	13	17*	15
Few	44	42	40	39	41
None	32	34	34	34	34
Seriously considered suicide					
Within last 2 years	3	2*	5	6+	4
Within last year	2	1*	3	3+	2
Within last 2 months	1	1	1	1	1
No	93	96*	92	89+	93
Had serious problems dealing with spouse, parents, friends, or children					
Often	6	5	6	5	5
Sometimes	18	18	17	17	18
Seldom	46	43*	47	45	44
Never	30	33*	28	32	32
Experienced major pleasant change in last year					
Often	9	6*	10	10+	8
Sometimes	31	32	31	31	31
Seldom	42	42	43	45	43
Never	17	19	16	14+	17
Causes biggest problem in life					
Money	36	46*	37	46*	45
Social life	7	5*	7	5	5
Family	11	10	9	7	9
Supervisor	4	2*	3+	1*+	2
Job	21	15*	20	24+	19
Health	3	2*	5	3	2
No problem	16	17	17	14	16

Note. Indicated sample sizes are unweighted; percentages based on weighted sample.

\*Sex differences significant at  $p < .05$ .

+Service differences significant at  $p < .05$ .

**TABLE XVI**  
**PERCENT DISTRIBUTION OF EXPOSURE TO TRAUMATIC EVENTS BY GENDER AND SERVICE**

	Navy		Marine Corps		Total
	Women (n = 4158)	Men (n = 3904)	Women (n = 910)	Men (n = 884)	(n = 9856)
Abused prior to entering military*					
Emotionally	18	9	18	7	9
Sexually	16	2	18	4	5
Physically	11	6	13	6	6
Not abused	71	87	67+	87	85
Abused since entering military*					
Emotionally	19	10	23+	9	11
Sexually	5	<1	6	1	1
Physically	9	1	11+	3	3
Not abused	75	89	71+	88	87
Ever received treatment for abuse					
Yes	14	3	14	2	4
No	29	18	34+	18	19
NA	56	78	51+	80	76
Exposed to natural disaster involving injuries					
Yes, witnessed	14	22	14	21	21
Yes, survivor/victim	13	15	8+	11+	13
Yes, participated in aiding those involved	14	26	8+	17+	21
No	69	55	75+	60+	58
Exposed to combat or violence					
Yes, witnessed	6	18	8	22	18
Yes, survivor/victim	2	5	2	7	6
Yes, used deadly force	<1	4	<1	8+	5
Yes, participated in combat or violence	7	17	4+	15	15
No	87	66	89	60+	66
Witnessed or been involved in a					
Major accident					
Yes, witnessed	14	28	16	29	27
Yes, survivor/victim	10	15	10	17	15
Yes, participated in accident	12	24	7+	19	20
No	69	48	71	48	50

Note. Indicated sample sizes are unweighted; percentages based on weighted sample. All within service male-female comparisons significant at  $p \leq 0.05$ .

\*Respondents could answer more than one.

+Service differences significant at  $p < .05$ .

**TABLE XVII**  
**JOB STRESS AND JOB SATISFACTION SCORES BY GENDER AND SERVICE**

	Navy		Marine Corps		Total
	Women Mean (SE)	Men Mean (SE)	Women Mean (SE)	Men Mean (SE)	Mean (SE)
Job Stress <sup>a</sup>					
Responsibility	4.2 (.06)	4.4 (.07)*	4.2 (.09)	4.8 (.13)*	4.5 (.06)+
Quality Concern	3.5 (.05)	3.6 (.05)*	3.3 (.10)	3.7 (.18)*	3.6 (.07)
Role Conflict	4.0 (.05)	3.9 (.05)	3.8 (.12)	3.9 (.15)	3.9 (.06)
Job vs nonjob conflict	3.7 (.06)	3.7 (.06)	3.7 (.15)	4.3 (.22)*	3.9 (.09)+
Overall	15.4 (.17)	15.6 (.20)	15.0 (.41)	16.5 (.59)*	15.9 (.25)
Job Satisfaction <sup>b</sup>	6.1 (.08)	6.5 (.07)*	5.7 (.18)	5.9 (.22)	6.2 (.10)+

<sup>a</sup>House Job Pressures scale indicating higher scores with more frequent stress.

<sup>b</sup>House Job Satisfaction Index indicating higher scores with greater satisfaction.

\*Within service men-women comparisons significant at  $p \leq 0.05$ .

+Navy-Marine Corps comparisons between men significant at  $p \leq 0.05$ , none significant for women.

**TABLE XVIII**  
**PERCENT DISTRIBUTION OF WEIGHT AND DIETARY BEHAVIOR AND ATTITUDES**  
**BY GENDER AND SERVICE**

	Navy		Marine Corps		Total
	Women (n = 4158)	Men (n = 3904)	Women (n = 910)	Men (n = 884)	(n = 9856)
Considers self to be					
Overweight	46	33*	29+	19*+	29
Underweight	3	6*	4	7*	6
About right weight	51	61*	65+	73*+	65
Would like to weigh					
Less	77	54*	73+	42*+	52
More	4	14*	5+	28*+	18
Stay about the same	19	31*	20	30*	30
Have tried to lose weight in past year	67	43*	65	38*	44
Have changed what eat because of medical conditions	17	11*	18	8*+	10
Satisfied with eating patterns	50	61*	49	57*	58
Eats in secret	12	6*	11	6*	7
Interested in hearing/reading about nutrition					
Yes	81	71*	79	70*	72
Don't really care	7	13*	10	13*	12
No	3	16*	10	16*	15
Feel diet is important in terms of health	93	90*	91	85*+	88
Consider very or extremely important when purchase foods					
Health benefits/nutritional value	53	42*	46+	39*	42
Price, cost	52	57*	54	53	55
Likes or dislikes, eating enjoyment	77	71*	74+	70	71
Convenient, easy to prepare	53	39*	50	44*+	42
Calories	38	24*	34	28	27

Note. Indicated sample sizes are unweighted; percentages based on weighted sample.

\*Sex difference significant at  $p < .05$ .

+Service difference significant at  $p < .05$ .

TABLE XIX

## PERCENT DISTRIBUTION OF OTHER HEALTH BEHAVIORS AND ATTITUDES BY GENDER AND SERVICE

	Navy		Marine Corps		Total (n = 9856)
	Women (n = 4158)	Men (n = 3904)	Women (n = 910)	Men (n = 884)	
Engage in strenuous physical activity at least 3 times/week	57	64*	65+	76*+	68
Current physical fitness rating					
Poor	6	3*	6	3*	3
Fair	24	16*	22	10*+	14
Good	38	37	35	36	37
Very good	21	27*	23	32*+	28
Excellent	10	16*	13+	18*	16
Smoked at least 100 cigarettes in life	43	49*	38	46*	47
Cigarette smoking habits					
Never smoked	54	48*	58	50*	50
Current smoker	24	26	20+	30*	27
Ex-smoker	21	25*	21	19+	23
Agree or strongly agree counseling readily available during past year if needed on					
Quitting smoking	50	52	41+	45	49
Alcohol abuse	56	62*	56	62	62
Drug abuse	52	60*	53	60	59
Birth control/family planning	52	48*	49	47	48
Weight control	45	49*	39+	50*	49
Stress management	48	49	42+	42+	46

Note. Indicated sample sizes are unweighted; percentages based on weighted sample.

\*Sex difference significant at  $p < .05$ .

+Service difference significant at  $p < .05$ .

**TABLE XX**  
**DISTRIBUTION OF HEALTH BEHAVIORS BY GENDER AND SERVICE**

	Navy		Marine Corps		Total
	Women Mean (SE)	Men Mean (SE)	Women Mean (SE)	Men Mean (SE)	
No. of days in past week					
Ate breakfast	3.7 (0.07)	3.4 (0.07)*	3.3 (0.10)+	3.3 (0.14)	3.4 (0.07)
Ate snacks before meals	3.9 (0.04)	3.8 (0.05)*	3.8 (0.14)	3.9 (0.12)	3.8 (0.05)
Overate	1.3 (0.03)	1.3 (0.03)	1.2 (0.07)+	1.3 (0.08)*	1.3 (0.04)
Not ate enough	1.3 (0.04)	1.1 (0.05)*	1.5 (0.11)	1.6 (0.07)+	1.3 (0.04)
Took vitamins	2.4 (0.06)	1.8 (0.06)*	2.4 (0.10)	1.6 (0.17)*	1.8 (0.08)
Took antioxidants	0.6 (0.04)	0.6 (0.05)	0.6 (0.08)	0.4 (0.08)*+	0.6 (0.04)
Avg. hrs of sleep per night	6.5 (0.03)	6.4 (0.03)*	6.5 (0.04)	6.3 (0.08)*	6.4 (0.04)
Avg. no. of caffeinated beverages per day	3.0 (0.05)	3.9 (0.06)*	3.0 (0.07)	3.5 (0.20)*	3.6 (0.08)
Avg. no. of alcoholic beverages per day	0.4 (0.02)	0.8 (0.04)*	0.4 (0.03)	1.3 (0.11)*+	0.9 (0.05)
Avg no. of cigarettes smoked by smokers on typical day	16.3 (0.45)	17.7 (0.59)*	13.5 (0.68)+	19.5 (1.84)*	18.3 (0.81)
Avg. no. of sexual partners in last 6 months	1.1 (0.02)	1.2 (0.03)*	1.1 (0.04)+	1.6 (0.10)*+	1.4 (0.05)

\*Sex difference significant at  $p < .05$ .

+Service difference significant at  $p < .05$ .

**TABLE XXI**  
**PERCENT DISTRIBUTION OF BIRTH CONTROL USE BY GENDER AND SERVICE**

	Navy		Marine Corps		Total	
	Women	Men	Women	Men	Women	Men
	(n = 4158)	(n = 3904)	(n = 910)	(n = 884)	(n = 5068)	(n = 4788)
<b>Birth control method currently used*</b>						
Tubal ligation	11*+	8+	8*	4	11*	6
Vasectomy	5*	12+	4*	7	5*	10
Norplant	1*	1	2*	0	1*	0
Depo-Provera®	7*	1	10*	2	8*	1
Birth control pills	29*	12	30*	13	29*	12
IUD	0	0	0	1	0	1
Diaphragm	1*	1	1	2	1	1
Condom	19*+	28+	22*	44	20*	35
Spermicide	4*	3	3	2	4*	2
Sponge	0	0	0	0	0	0
Douche	1*	0	1*	0	1*	0
Withdrawal	5*+	7+	7*	11	5*	9
Rhythm	2	3	3	2	2	2
Abstinence	9*+	5	6	4	9*	5
Other	3	2	2	2	3	2
None	24*	33	25	33	24*	33
<b>Reasons for not using birth control*</b>						
Religious/moral beliefs	3	3	3	3	3	3
Partner's preference	1*	7	1*	7	1*	7
Inconvenient/interferes with spontaneity	1*	3	2*	5	1*	4
Want to get pregnant	9*	7	7	7	8	7
<b>Total years women took birth control pills in lifetime.+</b>						
(Mean, SE)	5.0 (0.1)	-	4.3 (0.2)	-	4.9 (0.1)	-

Note. Indicated sample sizes are unweighted; percentages based on weighted sample; SE = standard error.

\*Respondent could indicate more than one.

\* Sex differences significant at  $p < .05$ .

\*Service differences significant at  $p < .05$

TABLE XXII

PERCENT DISTRIBUTION OF HAZARD EXPOSURE FIVE YEARS OR MORE (5+ YEARS) BY GENDER AND SERVICE. (FOR ALL JOBS OR HOBBIES YOU HAVE HAD, INDICATE THE KNOWN HEALTH HAZARDS THAT ARE/WERE PRESENT AND THE NUMBER OF YEARS YOU HAVE BEEN/WERE EXPOSED.)

	Navy			Marine Corps		
	Women	Men	Total	Women	Men	Total
	(n = 4158)	(n = 3904)	(n = 8062)	(n = 910)	(n = 884)	(n = 1794)
Fibrous glass (fiberglass)	1.4	8.5*	7.4	0.9	4.9*+	4.7
Asbestos	2.4	8.2*	7.2	3.8	5.5+	5.4
Coal dust or rock dust	0.5	1.2*	1.1	1.1	0.7	0.7
Silica powder or sandblasting dust	0.8	2.8*	2.5	0.3	1.1+	1.1
Other specific dusts (woods, talc, lime)	2.2	8.0*	7.0	1.5	6.4*	6.2
Respiratory or skin irritants	4.3	11.5*	10.3	3.1	9.6*	9.3
Chemicals (acids, alkalis, solvents)	6.2	18.3*	16.3	5.0	15.1*	14.6
Metal fumes (from molten metal)	0.8	3.9*	3.4	0.6	1.9*+	1.8
Welding fumes	1.3	6.6*	5.7	0.7	2.4*+	2.3
Coal tar, pitch, asphalt	0.6	1.4*	1.2	0.3	2.5*	2.4
Engine exhaust, grease, oils, fuel	7.8	30.2*	26.6	8.9	25.6*	24.8
Heat (severe)	2.6	13.1*	11.4	2.9	11.4*	11.0
Cold (severe)	2.7	6.8*	6.1	2.2	11.0*+	10.6
Noise (loud)	10.5	36.1*	31.9	12.0	33.9*	32.9
Non-ionizing radiation	1.0	6.1*	5.3	0.5	1.8+	1.7
Ionizing radiation (x-rays)	3.4+	7.1*	6.5	1.6	1.6+	1.6
Vibration (vibrating tools, motors)	4.3	22.7*	19.7	3.2	14.8*+	14.2
General shop dust	6.6	23.2*	20.5	8.5	19.7*	19.2
Pesticides, herbicides	2.3	5.2*	4.8	1.9	6.1*	5.9
Acids	2.0+	7.1*	6.2	0.9	5.7*	5.5
Alcohol (industrial)	3.2+	8.8*	7.9	1.9	5.5*+	5.4
Other (please specify)	2.0+	1.9	1.9	0.2	1.7*	1.6

Note. Indicated sample sizes are unweighted; percentages based on weighted sample.

\*Sex differences significant at  $p < .05$ .

+Service differences significant at  $p < .05$ .

TABLE XXIII

PERCENT DISTRIBUTION OF OCCUPATIONAL AND ENVIRONMENTAL EXPOSURES BY GENDER AND SERVICE  
(HAVE YOU BEEN EXPOSED TO ANY OF THE FOLLOWING IN THE PAST 12 MONTHS?)

	Women (n = 4158)	Navy Men (n = 3904)	Total (n = 8062)	Women (n = 910)	Marine Corps Men (n = 884)	Total (n = 1794)
a. Adhesives or gluing compounds	15.2	34.7*	31.6	13.2	31.0*	30.2
b. Asbestos (loose)	5.1	8.2*	7.7	6.6+	11.4*	11.2
c. Carbon monoxide	8.5	25.5*	22.8	12.9+	31.7*	30.8
d. Diesel exhaust (within 50 ft)	12.2	28.0*	25.4	21.6+	45.7*+	44.5
e. Diesel fuel (within 50 ft)	8.5	21.2*	19.1	16.8+	38.2*+	37.2
f. Dry cleaning solvent	6.9	14.8*	13.7	9.4+	27.1*+	26.3
g. Exhaust from gasoline engine	21.4	42.3*	38.9	26.3	44.6*	43.8
h. Gasoline (liquid or vapor)	21.8	37.4*	34.9	22.5	37.1*	36.4
i. Guided missile fuel	0.6	0.5	0.5	0.5	1.7*	1.7
j. High temperature (above 95°F)	26.0	39.3*	37.1	29.8	44.8*	44.1
k. Hypodermic needles (used)	10.3 <sup>+</sup>	7.8	8.2	5.4	7.7	7.6
l. Insecticides	9.6	16.0*	15.0	7.5	12.6*	12.4
m. Jet exhaust (within 50 ft)	8.7	19.3*	17.6	7.9	25.5*	24.6
n. Jet fuel (within 50 ft)	7.4	14.9*	13.7	7.3	20.1*	19.5
o. Loud noise (jets)	27.6	43.3*	40.8	38.0	57.8*+	56.9
p. Lifting 25-49 pounds	43.2	63.2*	60.0	44.0	68.2*	67.1
q. Lifting 50 or more pounds	20.8	53.9*	48.6	23.0	61.0*+	59.3
r. Low temperature (below 32°F)	18.9	29.1*	27.4	17.5	30.0*	29.5
s. Metal scrapings or filings	5.7	16.8*	15.0	5.0	19.4*	18.7
t. Microwave oven (within 3 ft)	55.7	57.9	57.5	51.4	56.3	56.0
u. Paint, (oil based) or thinner	19.6	33.2*	31.0	19.6	34.2*	33.6
v. Paint, unknown type	15.3	19.8*	19.0	13.6	26.5*+	25.9
w. Paint scrapings or paint sanding	12.8	25.8*	23.7	10.7	28.1*	27.3
x. Radar antenna or array (within 50 ft)	5.7	14.9*	13.4	6.9	16.1*	15.7
y. Solvent or degreaser	11.2	27.1*	24.5	15.6+	32.8*	32.0
z. Torpedo fuel	0.5	1.0*	0.9	0.5	0.7	0.7
aa. Transmitting antennas (within 50 ft)	5.9	16.1*	14.5	9.7	26.9*+	26.1
bb. Video display terminal	32.7	47.3*+	44.9	26.4	36.2	35.7
cc. Welding fumes	3.6	15.0*	13.2	3.7	12.3*	11.9
dd. Dust particles	23.4	35.8*	33.8	21.1	37.3*	36.5
ee. Explosives (non-nuclear)	3.0	10.8*	9.6	5.1	25.0*+	24.1
ff. Nitrous oxide	1.7+	2.2	2.1	0.3	2.8*	2.7

*Note.* Indicated sample sizes are unweighted; percentages based on weighted sample. \*Sex differences significant at  $p < .05$ . +Service differences significant at  $p < .05$ .

TABLE XXIV

PERCENT DISTRIBUTION OF OCCUPATIONAL/ENVIRONMENTAL PROTECTION VARIABLES BY GENDER AND SERVICE

	Navy			Marine Corps		
	Women (n = 4158)	Men (n = 3904)	Total (n = 8062)	Women (n = 910)	Men (n = 884)	Total (n = 1794)
Protective gear available in current job						
Yes	50.5	64.3*	62.1	41.2	65.6*	64.5
No	7.9	5.8*	6.1	7.9	4.1	4.3
Sometimes	6.7	6.8	6.8	8.0	10.6+	10.5
Not applicable	34.1	22.2*	24.2	41.9	18.8*	19.8
Frequency of using protective gear when in contact with substances that might be harmful						
Never	2.5	1.5*	1.7	3.7	3.5	3.5
Some	6.8	7.6	7.5	8.1	14.2*+	14.0
Most	14.9	24.6*	23.0	14.6	26.4*	25.9
Always	36.0	47.0*	45.2	23.7+	35.4*+	34.9
Not applicable	39.2	18.4*	21.8	49.0+	19.9*	21.3
Reasons for not wearing protective gear <sup>a</sup>						
Doesn't work properly	3.1	4.8*	4.5	3.5	7.3*	7.1
Interferes with job performance	11.9	19.1*	17.9	13.6	26.3*+	25.8
It is uncomfortable	9.3	12.6*	12.0	9.7	17.6*+	17.2
Don't know how to use it	0.9	0.8	0.8	0.8	1.6	1.5
It is not needed	10.3	12.2*	11.9	10.9	14.0	13.9
Always wear	25.8	32.2*	31.2	15.2+	23.4*+	23.0
Not applicable	47.3	31.3*	33.9	56.3+	31.0*	32.2
Exposed to tobacco smoke 1 or more hours/day in immediate work or living area (last 30 days)						
Not exposed	64.3	65.3	65.1	62.6	53.0*+	53.4
Work area only	6.3	8.6*	8.2	12.0+	11.7	11.7
Living area only	19.3	14.4*	15.2	14.6+	16.0	15.9
Both work and living area	9.3	10.6	10.4	9.8	18.5*+	18.1
Currently in medical surveillance program <sup>ab</sup>						
Noise	7.8	15.6*	14.4	8.1	17.9*	17.4
Asbestos	2.3	8.8*	7.8	3.2	6.6*	6.5
Other	4.7	9.7*	8.9	1.7	3.7+	3.6
None	87.2	73.1*	75.4	87.8	75.1*	75.7

Note. Indicated sample sizes are unweighted; percentages based on weighted sample.

<sup>a</sup>Respondents could indicate more than single response.

<sup>b</sup>Examples given of protective gear were gloves, respirator, filter, mask, boots, ear plugs, film badge, hazardous materials suit, and firefighting suit.

\*Sex differences significant at  $p < .05$ . +Service differences significant at  $p < .05$ .

**TABLE XXV**  
**PREVALENCE (IN PERCENT) OF FEMALE-SPECIFIC CONDITIONS IN LAST THREE MONTHS REGARDLESS**  
**OF WHETHER THEY RESULTED IN A VISIT TO SICK CALL OR A HEALTH CARE PROVIDER**

Condition	Navy (n = 4158)	Marine Corps (n = 910)	Total (n = 5068)
Menstrual problems	61.7	65.1	62.2
Abdominal pain	25.2	28.1	25.7
Endometriosis	2.3	3.0	2.4
Breast lump	5.5	3.6	5.2
Premenstrual symptoms	56.2	56.4	56.2
Vaginal rash	8.6	13.2*	9.3
Yeast or vaginal infection	22.1	27.3*	22.9
Problems with uterus	3.0	3.2	3.0

Note. Indicated sample sizes are unweighted; percentages based on weighted sample.

\*Service differences significant at  $p < .05$ .

**TABLE XXVI**  
**PERCENT DISTRIBUTION OF WOMEN'S HEALTH PREVENTIVE BEHAVIORS AND**  
**CANCER SCREENING BY SERVICE**

	Navy (n = 4158)	Marine Corps (n = 910)	Total (n = 5068)
Mammogram in last 5 years			
< 40 years old	18	19	18
≥ 40 years old	91	90	91
Time since breasts examined by a physician or nurse?			
< 1 year	70	72	70
1 year or more	28	25	28
Never had	1	1	1
Received training from provider on breast self-exam	91	90	90
Had operation to remove noncancerous lump from breast	6	5	6
Time since last Pap smear			
<1 year*	70	76	71
1 year or more*	29	22	28
Never had	0	0	0
Ever had non-normal Pap smear result	41	40	41

Note. Indicated sample sizes are unweighted; percentages based on weighted sample.

\*t-test of significance between services  $p < .05$ .

**TABLE XXVII**  
**PERCENT DISTRIBUTION OF ACCESS TO OB/GYN SERVICES BY SERVICE**

	Navy (n = 4158)	Marine Corps (n = 910)	Total (n = 5068)
Know where to get info about pregnancy and possible risks from your job and job environment			
Yes	75.7	72.0	75.1*
No	10.5	13.8	11.1*
Not applicable	12.7	12.6	12.7
When pregnant, feel enough OB/GYN trained personnel available when necessary			
Yes	31.5	30.6	31.3
No	15.9	21.8	16.8*
Not applicable	51.7	46.1	50.8*
When pregnant, given enough time off job to be seen in OB/GYN when necessary			
Yes	38.8	44.0	39.6*
No	5.9	6.6	6.0
Not applicable	54.2	47.5	53.1*
While on OCONUS orders, difficult to receive kind of OB/GYN care would like			
Yes	13.7	17.9	14.4*
No	30.5	25.4	29.7*
Not applicable	54.4	54.1	54.4

Note. Indicated sample sizes are unweighted; percentages based on weighted sample.

\*t test of significance between services,  $p < .05$ .

TABLE XXVIII

PERCENT DISTRIBUTION OF SATISFACTION WITH OB/GYN SERVICES AT LAST VISIT AMONG SERVICE USERS

	Satisfied/Very Satisfied		Neither Satisfied nor Dissatisfied		Dissatisfied/Very Dissatisfied	
	Navy	Marine	Navy	Marine	Navy	Marine
Quality of medical services	81	79	10	11	9	10
Time to get to medical facility	77	74	12	15	11	12
Time waited at facility to see provider	64	59	14	13	22	27
Priority shown as active-duty member*	63	54	19	22	18	24
Priority shown when had orders to deploy	60	54	33	34	8	12
Variety of medical services available*	70	62	19	23	11	15
Type of medical professionals seen	77	74	12	15	10	11
Amount of privacy during visit	83	81	10	12	8	7
Consideration and respect shown	80	77	11	14	9	9
Timeliness of follow-up care	72	65	15	19	13	16

\*X<sup>2</sup> test of significance between services  $p < .05$ .

**TABLE XXIX**  
**PERCENT DISTRIBUTION OF REPRODUCTIVE STATUS IN NAVY AND MARINE CORPS WOMEN**

	Navy (n = 4158)	Marine Corps (n = 910)	Total (n = 5068)
Pregnant in past 12 months	18.0	21.2	18.5
Had pregnancy complications	5.8 [32.5] <sup>a</sup>	6.5 [30.6]	6.0 [32.2]
Had miscarriage/spontaneous abortion	3.1 [17.4]	2.7 [12.6]	3.1 [16.5]
Had elected abortion	1.8 [10.1]	2.0 [9.6]	1.9 [10.0]
Had a stillbirth	0.1 [0.6]	0.0 [0.0]	0.1 [0.5]
Had childbirth problems	4.1 [22.3]	3.7 [17.5]	4.0 [21.4]
Had postpartum complications	1.2 [6.4]	1.8 [8.4]	1.3 [6.8]
Problems becoming pregnant	7.9	8.4	8.0
Became pregnant since active duty	52.5	56.9	53.2
Pregnant now	5.5	9.4*	6.1
Planned	3.8 [69.4] <sup>b</sup>	5.0* [52.9]	4.0 [65.4]
Unplanned	1.7 [30.0]	4.3* [46.0]	2.1 [33.8]

Note. Indicated sample sizes are unweighted; percentages based on weighted sample.

\*t-test of significance between services,  $p < 0.05$ .

[<sup>a</sup>] Percent among women who have been pregnant in last year.

[<sup>b</sup>] Percent among women who are currently pregnant.

**TABLE XXX**  
**PERCENT DISTRIBUTION OF PREGNANCY AND CHILDBIRTH HISTORY BY SERVICE**

	Navy (n = 4158)	Marine (n = 910)	Total (n = 5068)
Number of times pregnant , mean	1.3	1.3	1.3
Number of live births among women with at least 1 birth, mean	4.3	5.3	4.4
If you missed a period in the last 30 days, have you had pregnancy test?			
Yes	9.0	12.9	9.6
No, not yet	2.1	1.6	2.1
No, hysterectomy or menopausal*	3.1	1.3	2.8
No, other	8.3	8.9	8.4
Not applicable/did not miss period	76.4	73.7	76.0
Taken replacement estrogens in last 30 days			
Yes, any hormone*	3.6	2.2	3.4
Happy/unhappy to be pregnant next year			
Happy	42.7	45.5	43.2
Neither/nor	16.7	15.9	16.6
Unhappy	37.9	36.6	37.7
Convenient/inconvenient to be pregnant next year			
Convenient	19.0	18.1	18.9
Neither/nor	19.5	21.7	19.9
Inconvenient	58.8	58.1	58.7
Any babies born prematurely or under 5 pounds			
Yes	5.7	4.7	5.5
No	43.7	40.8	43.3
Not applicable	49.5	53.0	50.0
Any babies stayed in the hospital after you came home			
Yes	6.3	6.3	6.3
No	42.7	38.8	42.1
Not applicable	49.8	53.2	50.3
Breast-fed at least one of your children			
Yes	29.1	26.4	28.7
No	20.0	18.5	19.8
Not applicable	49.6	53.6	50.2
Compare your children with other children their age			
Less healthy	1.1	1.0	1.1
Same	24.2	20.8	23.7
More healthy	23.0	22.4	22.9
Not applicable	50.5	54.3	51.1

Note. Indicated sample sizes are unweighted, percentages based on weighted sample.

\*t-test of significance between services,  $p < 0.05$ .

## APPENDIX

RESPONDENT SAMPLE SIZE, UNWEIGHTED AND WEIGHTED (IN PARENTHESES), BY SERVICE,  
GENDER, PAYGRADE, AND RACE

Paygrade/ Race	Service and Gender				Total
	Navy Male	Navy Female	Marine Corps Male	Marine Corps Female	
E1 - E6					
White	1,767 (77462.52)	2,061 (14632.78)	169 (65828.78)	385 (2592.57)	4,382 (160516.71)
Other	498 (27499.95)	906 (7804.12)	84 (23586.00)	225 (1772.80)	1,713 (60662.86)
E7-E9					
White	558 (15680.12)	282 (1194.09)	152 (6912.22)	70 (329.71)	1,062 (24116.14)
Other	246 (3770.05)	62 (289.03)	95 (3582.00)	36 (204.20)	439 (7845.28)
Officer					
White	649 (26626.73)	690 (4814.00)	251 (13678.00)	167 (551.82)	1,757 (50369.40)
Other	186 (2322.00)	157 (819.00)	133 (1458.00)	27 (99.00)	503 (4698.85)
Total	3,904 (153361.43)	4,158 (29553.88)	884 (115045.00)	910 (5550.10)	9,856 (303510.40)

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